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ABSTRACT

An increase in the number of schools adopting year-round programs prompted this analysis of all year-round education programs in California. Chapter 1, "Introduction to the Study," outlines study organization and calendar scheduling plans. "Design of the Study," chapter 2, describes data obtained from interviews, surveys, databases, site visits, and California Assessment Program files. Chapter 3, "Academic Achievement in Year-round Schools," interprets achievement data. Compared to traditional schools, year-round schools most frequently serve lower socioeconomic communities and have twice as many limited and non-English-speaking students and a larger percentage of minority students. Many schools are not achieving at predicted levels, though single-track schools have the strongest performance. Chapter 4, "Cost Analysis," reveals that increased per-pupil costs compare with those of traditional programs. "Characteristics of the Year-round Education Program," chapter 5, discusses operations and survey results. Teachers experienced better quality instruction and preferred teaching year-round. Students had mixed feelings about school scheduling. Parents' overall satisfaction was positive. The final chapter, "Conclusions and Recommendations," indicates that year-round education is an acceptable alternative. Overcrowding is relieved, new school construction is avoided, and flexible curriculum planning and extended teacher employment are offered. Recommendations are provided to districts and state agencies. Twenty-one tables and 13 figures exhibit data findings; 5 appendices provide survey instruments. (CJH)

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Year-round Education: Year-round Opportunities

A Study of Year-round Education in California

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Year-round Education: Year-round Opportunities

A Study of Year-round Education in California

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Contents

Page

Acknowledgments vi

Executive Summary 1

I. Introduction to the Study 8
- Organization of This Report 8
- Background of the Study 9
- Scheduling Patterns 10

II. Design of the Study 18

III. Academic Achievement in Year-round Schools 21
- Literature on Achievement in Year-round Schools 21
- Methodology Used in Analysis of Achievement 24
- Findings of the Study on Academic Achievement 27

IV. Cost Analysis 43
- The Existing Situation 43
- Incentives for Overcrowded Districts 44
- Costs for Year-round Schools 46
- Findings of the Study on Costs 54

V. Characteristics of Year-round Education Programs 66
- District Decisions and Policies 66
- Practices and Procedures in Year-round Schools 77
- Teachers' Views of Year-round Education 87
- Students' Views of Year-round Education 90
- Parents' Views of Year-round Education 91

VI. Conclusions and Recommendations 93
- Conclusions 93
- Recommendations 97

Selected References 100

Appendices 102

A -- Year-round Education Study: District Survey 103
B -- Year-round Education Study: School Survey 115
C -- Year-round Education Study: Teacher Survey 124
D -- Year-round Education Study: Student Questionnaire 128
E -- Year-round Education Study: Parent Questionnaire 130

List of Tables

Table I-1	Summary of Typical Year-round and Traditional Plans	17
Table III-1	Spring CAP Testing Dates for Traditional and Year-round School Calendars	25
Table III-2	Background Variables of Year-round and Traditional Calendar Schools	28
Table III-3	Enrollment in Year-round Schools by Racial or Ethnic Group	29
Table III-4	California Assessment Program Test Results for Year-round and Traditional Calendar Schools	30
Table III-5	Standardized Residuals for the California Assessment Program Test Results for Year-round Schools	33
Table III-6	Background Variables and Standardized Residuals for the CAP Test Results for Single-Track Compared with Multitrack Year-round Schools	37
Table III-7	Background Variables and Standardized Residuals for CAP Test Results for Multitrack Schools in Large Urban Districts and in Remaining Multitrack Schools	41
Table IV-1	Estimated Costs of Portables - District Level	47
Table IV-2	Estimated Costs of New School Construction - State Level	49
Table IV-3	Estimated Costs of Conversion to Multitrack Year-round Schools	51
Table IV-4	Differences in Operating Costs for Year-round, New Construction, and Portable Classrooms	53
Table IV-5	Comparison of 1985-86 Personnel Costs for Selected Single-Track, Multitrack, and Traditional Elementary Schools	56
Table IV-6	Comparison of 1985-86 Personnel Costs for Selected Single-Track, Multitrack, and Traditional Elementary Schools, Exclusive of Custodial Costs	57
Table IV-7	District Reported Cost Differences Associated with Year-round Education	60
Table V-1	Potential Reduction in Class Size as a Result of a Year-round Program	68
Table V-2	Comparison Between Year-round School Staff and All Public School Staff on Selected Variables	70
Table V-3	Percent of Single-Track and Multitrack Respondents Reporting Changes in Administrative Duties Compared with Administrative Duties in a Traditional School	80
Table V-4	Percent of Year-round Schools Offering Types of Intersession Programs	81
Table V-5	Percent of Respondents Reporting Frequency of Maintenance at Year-round Schools	83

Table V-6 Principals' Perceptions of Satisfaction with Year-round Education of Various Groups..... 85

List of Figures

Figure I-1 45/15 Single-Track Plan..... 12
Figure I-2 45/15 Multitrack Plan..... 13
Figure I-3 Concept 6 Plan..... 14
Figure I-4 60/20 Plan..... 15
Figure III-1 Grade 3 CAP Test Results for Year-round and Traditional Calendar Schools..... 31
Figure III-2 Grade 6 CAP Test Results for Year-round and Traditional Calendar Schools..... 32
Figure III-3 Standardized Residuals on Grade 3 CAP Test for Year-round Schools..... 34
Figure III-4 Standardized Residuals on Grade 6 CAP Test for Year-round Schools..... 35
Figure III-5 Standardized Residuals on the Grade 3 CAP Test for Single-Track and Multitrack Year-round Schools..... 38
Figure III-6 Standardized Residuals on the Grade 6 CAP Test for Single-Track and Multitrack Year-round Schools..... 39
Figure IV-1 Comparison of Personnel Costs for Selected Single-Track, Multitrack, and Traditional Elementary Schools..... 58
Figure IV-2 State Costs of Construction Alternatives Per Unhoused Student - Elementary Level..... 64
Figure V-1 Overall Parent Satisfaction with the Year-round Program Compared with the Traditional Program..... 92

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During the course of the study, we visited seven school sites and district offices which included Amesti Elementary School, Pajaro Valley Unified School District; Juarez-Lincoln Elementary School, Chula Vista City Elementary School District; Miles Avenue Elementary School and Huntington Park High School, Los Angeles Unified School District; Miller Elementary School and Farb Middle School, San Diego Unified School District; and Franklin Year-Round Elementary School, Oakland Unified School District. We are appreciative of the kindness of the personnel in these districts and schools.

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Claire Quinlan
Cathy George
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Executive Summary

This study of year-round education programs in California was prompted by a recent increase in the number of schools that have shifted to year-round programs. In an era of increasing enrollments, particularly among large minority-populated urban school districts, and fierce competition for scarce educational resources, many districts are choosing year-round education over more traditional alternatives such as portable classrooms, split sessions, and construction of new schools. For the most part the decision to convert to a year-round program is based on what is the most expedient way to accommodate burgeoning enrollments. Little is asked, or indeed known, about the educational impact of the year-round program.

Most studies on year-round programs are case studies of the experience of one school or school district with the year-round calendar and thus lack a statewide perspective. This study is the first attempt to analyze and synthesize information on all schools with year-round programs in California. The issues presented in this report span the major areas associated with year-round programs and are designed to inform decision makers at both the local and statewide levels.

Some of the questions and concerns about year-round education programs are listed below, together with summary findings and recommendations.

What is year-round education?

Year-round education is a reorganization of the school calendar into instructional blocks and vacations distributed across the calendar year so that learning is continuous throughout the year. A popular plan, called the 45/15 plan, has instructional blocks of 45 days followed by 15 days of vacation. The pattern is then repeated throughout the year. Students and teachers can be grouped into tracks whose instructional blocks and vacations are staggered; while one track is on vacation, another can use its space.

One interesting feature of the year-round program is the intersession program operated by some districts. During their vacation period students have access to remediation, enrichment, or acceleration programs. The intersession adds a great deal of flexibility to the curriculum.

What is year-round education in California like?

Although the first year-round education program implemented in California was for the purpose of improving academic achievement, most of the year-round programs in the state were designed to alleviate overcrowd-

ing. Two-thirds of the 277 schools operating year-round programs today are multitrack schools. The Los Angeles Unified School District is seriously considering phasing totally into year-round programs by 1991 (although some will be single-track schools).

The most popular plan in California is the 45/15 Plan, implemented by 69 percent of the schools in year-round education. This plan in the multitrack mode allows for accommodation of up to 33 percent more students than building capacity. The next two most popular plans, Concept 6 and the 60/20 Plan, provide for 50 percent and 33 percent more students, respectively. These plans represent 14 percent (Concept 6) and 11 percent (60/20 Plan) of the year-round schools.

A large majority of the year-round schools in the state are in the southern region, where the great waves of enrollment growth are occurring.

How does the academic achievement of students in year-round programs compare with that of students in traditional calendar programs?

California Assessment Program (CAP) results were analyzed to answer this question. Differences were found between the background characteristics of year-round schools and those of traditional calendar schools. Year-round schools are more likely to be found in communities with a lower socioeconomic status and a higher proportion of families receiving AFDC. Year-round schools also serve about twice as many limited- and non-English-speaking students as do traditional schools. Year-round schools are also characterized by a larger percentage of minority students than the statewide average. The best explanation for these differences in background characteristics is that the communities experiencing severe overcrowding are frequently in urban areas that have these associated demographic characteristics.

The analysis of reading and math CAP scores for grades 3 and 6 revealed the following:

- Year-round schools perform below the level predicted for them on the basis of their background characteristics.
- When single-track and multitrack schools were compared, single-track schools performed at or above prediction, whereas multitrack schools scored considerably below their predicted score.
- Multitrack schools were divided into those in large urban districts and those in nonurban districts. Analysis showed that although both groups of schools performed below their predicted levels, the multitrack schools in large urban districts performed further below prediction.

Many of the year-round schools in California are not achieving at predicted levels. This shortcoming is most likely due to factors unrelated

to the year-round calendar of the school but possibly related to the special needs of the communities in which year-round schools have been placed.

The strong performance of the single-track year-round schools indicates that the year-round calendar is a viable educational option that can be associated with achievement at or above predicted levels.

What are the costs and savings related to year-round programs?

At the district level the costs of implementing a year-round program usually are either transition costs, which may include the cost of air-conditioning, or operating costs, which would include additional staff salaries and utilities. To some extent these costs can be offset by state incentive grants, for which districts must apply and qualify. When the increased costs for the implementation of a year-round program are computed on a per-pupil basis, the costs are comparable to those for a traditional calendar program.

Savings at the district level might include the avoided costs of new construction (although this has been primarily a state-level cost in recent years), purchase or lease of portables, and/or busing. In addition, incidental savings accrue as a result of improved teacher and student attendance and of a decrease in vandalism costs.

At the state level the major costs for year-round education programs are the incentive costs. Three incentive programs currently exist: one paying $25 per pupil; another paying an additional amount up to $125 per pupil; and a third which has never been implemented and is due to expire in 1988. Districts must qualify on the basis of application for new school construction for the incentive programs. In 1986 twelve districts received the grant of $25 per pupil. The second program was enacted in 1986 and had not made payments at the time this report was written.

The major saving for the state is the avoided cost of new school construction. Estimates of construction costs to accommodate excess enrollment range from $2.8 billion to $5 billion. Additionally, savings accrue from the avoided cost to the state for financing or purchasing portables.

What are the factors associated with the district's decision to implement a year-round program?

The most important element in the implementation of the year-round program is community support. When the district is confronted with real or potential overcrowding, it faces choices among new construction, busing, split sessions, portables, or year-round education. Whatever alternative is chosen will affect the community in one way or another.

The staffing of year-round schools in most districts is voluntary, with some districts reporting waiting lists for the year-round assignment. In

general, year-round staff tend to be younger, less experienced, and less advanced educationally than their statewide counterparts. Year-round staff also include a higher proportion of females and minority members than the educational staff statewide.

Year-round programs also require a redistribution of student support services. Nurses, speech therapists, and other specialists must be employed year-round. Administrators in multitrack programs need special assistance because of the added duties of coordination and communication.

A district planning to implement a year-round program should expect increased demand for building maintenance. Multitrack year-round programs intensify wear and tear and leave little time for maintenance. Storage of teacher and student materials when a given track is on vacation is another consideration.

Costs, as described in the preceding question, should be considered in the decision to implement a year-round program. In addition to the incentive programs, the state also offers funding for insulation and air-conditioning for year-round schools.

What different practices and procedures are found in year-round schools?

The curriculum in year-round schools does not differ markedly from that of the traditional programs. The year-round instructional blocks appear to lend themselves well to the curriculum structure.

In the multitrack program, students can be assigned to tracks in a variety of ways, including geographic area, self-selection, ability grouping, and so on. Each method has its merits and problems.

In an elementary multitrack year-round school of fewer than 500 students, class scheduling can be a problem. Often, combined classes are necessary because there are not enough students at each grade to support all tracks. The problem is exacerbated at the secondary school in the scheduling of advanced or elective classes.

Intersessions allow time for creative projects, such as peer tutoring, special writing seminars, and so on. However, severely overcrowded schools often cannot offer intersessions because of space limitations. Intersessions are usually funded with summer school funding or categorical program funding.

Both teacher and student attendance tends to improve in year-round schools, where less fatigue and more enthusiasm are reported by staff. In addition, vandalism tends to decrease, probably because the schools are continually occupied.

Some year-round schools have heavy involvement with community agencies, such as child care, recreation, and law enforcement agencies. This involve-

ment is usually found in settings where the community is supportive of the year-round program.

How do teachers like the year-round program?

Teachers believe that the continuity of instruction characteristic of year-round education programs produces better-quality instruction than the traditional program. They cite less review time and less retention loss as benefits of the year-round program.

About 74 percent of the teachers said they preferred teaching in the year-round program. They also expressed strong satisfaction with both the duration and frequency of vacations, which they said relieved stress in a systematic way.

Teachers like the opportunities provided by the intersessions, both for the chance to engage in creative teaching activity and for the chance to supplement their salary by extra or substitute teaching.

Teachers in multitrack schools are particularly concerned about the problem of storage of materials when their track is on vacation because few schools seem to have adequate storage facilities. In addition, some teachers do not return to their original classroom after vacation but must "rove," a situation which creates a hardship for both teachers and their classes.

What do students think about the year-round program?

Students had difficulty distinguishing their feelings about year-round education from those about schooling in general. Some students had been in year-round programs since they entered school. In students' eyes the major feature of the year-round program was the vacation schedule, which was praised by more than half the students. A small group of students complained that summer vacation was too short or that they were not out of school when their friends were.

About 40 percent of the students thought they learned more in the year-round program because of the shorter vacations and less chance to forget what they had learned. Some secondary students found better job opportunities with the year-round calendar.

How do parents view the year-round program?

Parents' reactions to the year-round programs were somewhat mixed. About one-half of the parents had children who were all on the same vacation schedule; however, about a third of the parents said that planning family vacations was more difficult than with the traditional calendar. About 80 percent of parents surveyed were satisfied with the track assignments of their children.

In comparing year-round programs with traditional calendar schools, parents were divided. Between one-third and one-half of the parents did not see much difference between the two on several factors, such as quality of instruction, student attendance, child care arrangements, appearance of schools, and communications. The remaining parents heavily favored year-round over the traditional program in these areas. However, this latter group rated the year-round program worse than the traditional when they rated classroom conditions in hot weather. Overall satisfaction with the year-round program in comparison with the traditional program was clearly positive.

What conclusions and recommendations resulted from the study?

The major conclusion of this study is that the year-round education program is an acceptable alternative to the traditional calendar program. The year-round program can relieve school overcrowding as well as postpone or avoid new school construction. It offers flexibility for curriculum planning, and opportunities for extended teacher employment.

The following recommendations are offered:

To Districts Considering Implementation of a Year-round Program

1. Involve the community in the planning of the year-round program from the beginning. The cooperation and support of the community are important to the success of the program.

2. Allow adequate time for planning. Experienced administrators recommend a planning period of approximately 18 months.

3. Examine several calendar options to determine the one best suited to community needs. When selecting a calendar to accommodate elementary level demand, consider future secondary level needs, including an appropriate calendar. It is desirable for the district to coordinate its calendars if it uses more than one calendar.

4. Provide a clear and convenient option for parents who wish to have their students on a traditional calendar.

5. For a multitrack year-round program, develop a track assignment procedure that will serve the best interests of the student.

6. Investigate state incentive programs and special funding for air-conditioning and insulation of year-round schools.

7. For a multitrack year-round program, plan for extra maintenance and for storage space for instruction materials.

To Districts Operating Year-round Programs

1. Continue to foster community support for the year-round program. When community support wanes, the year-round program tends to deteriorate.

2. Use the flexibility provided by the year-round program to enhance the curriculum. Creative intersession programs can have sound educational value. Many schools have established exemplary practices which could be adopted by other schools.

3. Develop creative means of delivering staff development services to teachers and administrators in year-round schools.

4. When planning districtwide events or time lines, take into account the special schedule for the year-round program.

5. Consider the maintenance needs of a multitrack year-round school and schedule work accordingly. A regular cleaning and painting schedule for the district usually does not satisfy the needs of the year-round program.

6. Schedule standardized testing programs, including the California Assessment Program, so that each track has approximately the same number of weeks of instruction preceding testing as the traditional calendar schools have.

7. For a multitrack year-round program, provide administrative assistance for the school principal.

To State Agencies

Department of Education

1. Develop staff development incentives appropriate to a year-round education program.

2. Develop ways of using the flexibility of year-round programs to enhance school reform.

State Board of Allocation: Provide clear information regarding incentive programs for year-round education.

I. INTRODUCTION TO THE STUDY

Recently, the nation's governors convened in Hilton Head, South Carolina, to consider what they might do to improve public school education throughout the nation. One of their concerns focused on anticipated enrollment growth and underutilization of existing physical facilities. Governor Ted Schwinden of Montana noted that school buildings are the most underutilized public facilities. Representing an investment of a quarter of a trillion dollars, they are used for only 180 days of the calendar year. This concern resulted in a recommendation that "states should act to restore school buildings, including the adoption of year-round school calendars." This recommendation was published in a report, Time for Results: The Governors' 1991 Report on Education.

In California interest in year-round education programs has increased sharply over the past few years. Much of the interest occurs because many school district administrators are being forced to resolve actual or potential problems of overcrowding in their schools. Projections of student enrollment over the next five years show large growth patterns in certain areas of the state. According to Harold Hodgkinson (1986), there are "two million children under the age of five in California, the majority of whom live in the southern half of the state" (page 2). When this figure is compared to the current California public school enrollment of four million students, the dimensions of the problem of overcrowding become obvious. If this growth continues at a steady pace, 26,000 additional classrooms will be needed by 1990 (Trombley, 1985). However, school buildings cannot be constructed in time to accommodate this rapid growth in certain areas. Therefore, alternative courses of action must be thoroughly examined. Year-round education offers an alternative to school construction.

Organization of This Report

This study of year-round education programs in California was conducted by the Special Studies and Evaluation Reports Unit, Program Evaluation and Research Division, California State Department of Education, with support from Policy Analysis for California Education (PACE).[1] It was undertaken to examine the nature of year-round education programs, particularly as a potential solution to school overcrowding.

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[1] PACE was responsible for the cost analysis (Chapter IV) and assisted in interviewing certain experts and in making some of the site visitations.

The report focuses on three major aspects of year-round education: student achievement, cost, and characteristics. This chapter contains background information; Chapter II provides a description of the structure of the study; and Chapter III contains an analysis of data on student achievement in year-round schools as reported by the Department's California Assessment Program. Chapter IV provides a cost analysis of year-round education programs, and Chapter V contains a discussion of their operation, including the perspectives of teachers, students, and parents. The final chapter, Chapter VI, offers conclusions and recommendations.

Background of the Study

Year-round education is not a new concept. Since the turn of the century, a few school districts, particularly in large urban areas such as Buffalo and Chicago, have from time to time operated schools for 11 or 12 months each year. In some of these school districts, students have had the opportunity to attend school on more days than the state-required minimum, usually about 180 days. In other districts students have attended school for only the required number of days but have followed a schedule in which the instructional days are distributed over 12 months and vacations are allowed periodically. With this schedule vacations could be rotated so that the vacated space could be used by other students and above-capacity use could be made of school facilities. This type of scheduling provided a solution to overcrowded conditions without the expense of new school construction.

The Hayward Unified School District was the first California district to operate a year-round education program, primarily to improve the achievement of its students. The program was begun in one school in 1968. The school year was lengthened to 200 days and divided into four terms. Students attended school for 50 days and then went on vacation for three weeks. This pattern was repeated for the remainder of the school year. Special legislation was passed to grant exemption from certain state reporting requirements and to provide financial support for the additional instructional days. When the legislation expired in 1975, the program was not renewed, although the district showed evidence that test scores had improved and that parents, teachers, and students favored year-round education. Because the extra funding was lost, the year-round program continued under a 180-day plan, which still exists.

By 1972, rapid growth in school enrollment, especially in San Diego County and vicinity, had prompted 15 school districts in this area to institute year-round education programs to relieve overcrowded conditions. As the population growth continued, particularly in southern California, more districts began year-round programs until the movement reached its peak in 1976-77, when 56 districts operated such programs in 200 schools. Since then, as public school enrollments have decreased, the number of participating districts has declined to the present 42. Another factor contributing to the decline was the passage of Proposition 13, which restricted income. Thirteen districts suddenly discontinued their year-round programs in 1978.

Although the number of participating districts has fallen, the number of year-round schools has increased to 277; and the number of students served by these programs has reached the highest point ever, 251,000.

Nearly one-third of the districts operating year-round programs no longer suffer from overcrowded conditions, but they have chosen to continue year-round education for other reasons. Some of the other participating districts face rapidly increasing enrollment, and they plan to extend the program to other schools in their districts. The Los Angeles Unified School District, for example, is considering a plan to phase in year-round education programs for most of its schools over the next five years.

A directory published by The National Council on Year-round Education lists 63 school districts in 16 states operating year-round programs during 1985-86. Forty-two of these school districts are located in California. Seventy-one percent of the national enrollment in year-round programs is in California public schools, and 38 percent of the national enrollment in these programs is in the Los Angeles Unified School District. Of the 410 schools in the nation operating year-round programs, 277 are in California.

Scheduling Patterns

Year-round education programs come in a variety of forms. However, all have periods of instruction and vacation that alternate throughout the calendar year. The vacation periods are called intersessions, during which enrichment, acceleration, or remedial programs are usually offered for the students on vacation. However, not all districts offer intersession programs because some lack the space or financial resources to do so. Many districts use the intersession to provide categorical services. These intersession programs range in duration from one to three weeks and are voluntary. In many instances off-campus learning opportunities are offered, including community-based cultural or recreational programs.

Often-cited advantages of the year-round calendar over the traditional calendar are reduction in the potential learning loss that usually occurs over the summer and the distribution of vacations during the various seasons of the year. The year-round calendar also provides the opportunity for teachers on vacation to teach during the intersessions and thus earn additional salary beyond the regular contract.

One variation in year-round programs is the number of days students attend school. Most year-round programs adhere to the traditional school year of 180 days, but some have an extended school year of as many as 220 days. Only one of the schools participating in this study operates an extended school year program.

Depending on local conditions, students and teachers may all follow the same calendar or different calendars, which are referred to as tracks. Schools in which all students and teachers are in school or on vacation at

the same time are on a single-track. Schools in which students and teachers follow different calendars use a multitrack schedule.

The multitrack schedule can increase a school's capacity. As students in one track return from vacation, students in another track start vacation, freeing the space for the returning students. With multitrack year-round programs, there is some additional operational cost; however, the program results in savings or at least postponement of capital outlay. These costs are discussed in Chapter IV.

Some disadvantages associated with the multitrack plan include lack of sufficient time for maintenance, particularly for major repairs, and inconvenience to teachers, who must vacate their rooms and store their materials during their vacation periods. Some teachers are forced to return to a different classroom after vacation.

Year-round education programs have been implemented for a variety of reasons, among which are to improve student learning, provide seasonal vacations, add flexibility to the curriculum, and provide additional classroom space. All but ten of the school programs described in this report were initiated because of a need for more space that led them originally to adopt a multitrack plan. In many instances the need subsided, but the schools chose to remain on the year-round schedule for other reasons and converted to a single-track program.

Another variation among year-round programs is in the arrangement of blocks of time for instruction. At least 50 different scheduling patterns have been identified. Some schools operate both year-round and traditional schedules. However, three of the scheduling patterns and their modifications represent most of the year-round programs in California. The three most popular calendars are discussed here: the 45/15 Plan, the Concept 6 Plan, and the 60/20 Plan.

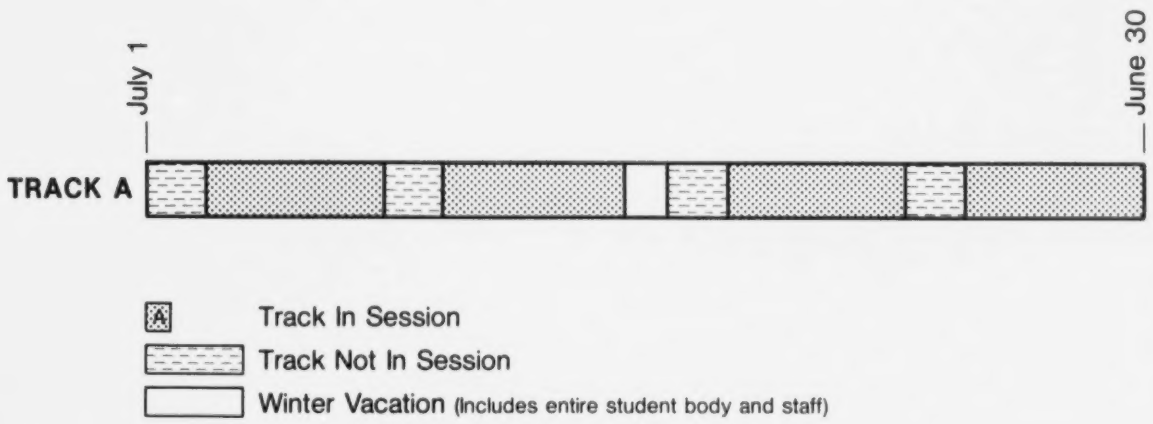
The 45/15 Plan

Under the 45/15 Plan, the school year is divided into four 45-day instructional terms separated by four 15-day vacation periods. The single-track 45/15 Plan provides the advantages of potential improvement in learning retention and seasonal vacations. However, this plan does not provide any space or cost savings. A typical 45/15 single-track calendar is shown in Figure I-1.

The popular 4-track 45/15 Plan can accommodate 33 percent more students than the traditional or single track plan. The advantages of the multitrack plan are similar to those of the single track plan, with the addition of the space saving feature described above.

The 45/15 Multitrack Plan suffers the disadvantages common to all multitrack programs; that is, difficult maintenance scheduling and lack of storage space for teacher materials. Another problem is the frequent

opening and closing of sessions, although one principal sees it another way. He said, "You avoid the problem of year-end closing; you never close." A sample calendar of the 45/15 Multitrack Plan is shown in Figure I-2.



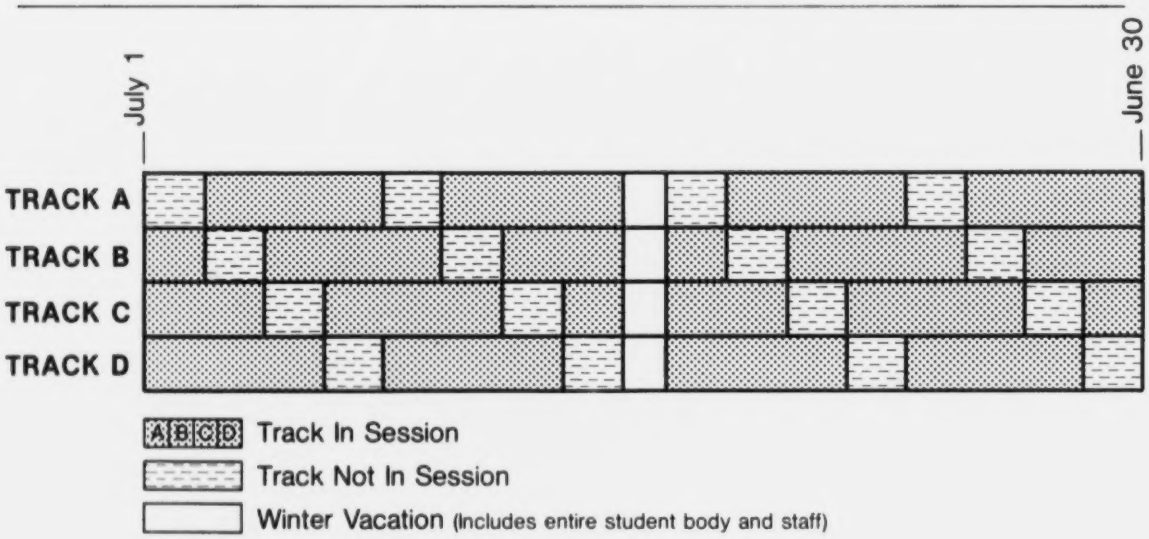
Source: Year-round Education Resource Guidebook. San Diego: San Diego County Office of Education, 1986.

Fig. I-1. 45/15 Single-Track Plan

The 45/15 Plan is the most popular calendar in California year-round schools, accounting for about 69 percent of them. All of these schools are elementary schools; about half are multitrack schools. Some school districts operate modifications of the 45/15 Plan by varying the instructional block size by a few days.

The Concept 6 Plan

The Concept 6 Plan divides the instructional year into six terms of approximately 43 days each. Students and teachers are in session during four of the six terms, but each pair of the terms must be consecutive. That is, each group's cycle consists of approximately 86 days of instruction followed by 43 days of vacation; then the pattern would be repeated. One of the major problems associated with this plan is that it provides less than the mandated state requirement of 175 school days. In California special legislation enables districts operating this type of program to lengthen the school day to accommodate the shorter year. Students in Concept 6 programs, therefore, receive the statutorily required number of instructional minutes. The Concept 6 Plan offers the greatest utilization of space of all the year-round plans.



Source: Year-round Education Resource Guidebook. San Diego: San Diego County Office of Education, 1986.

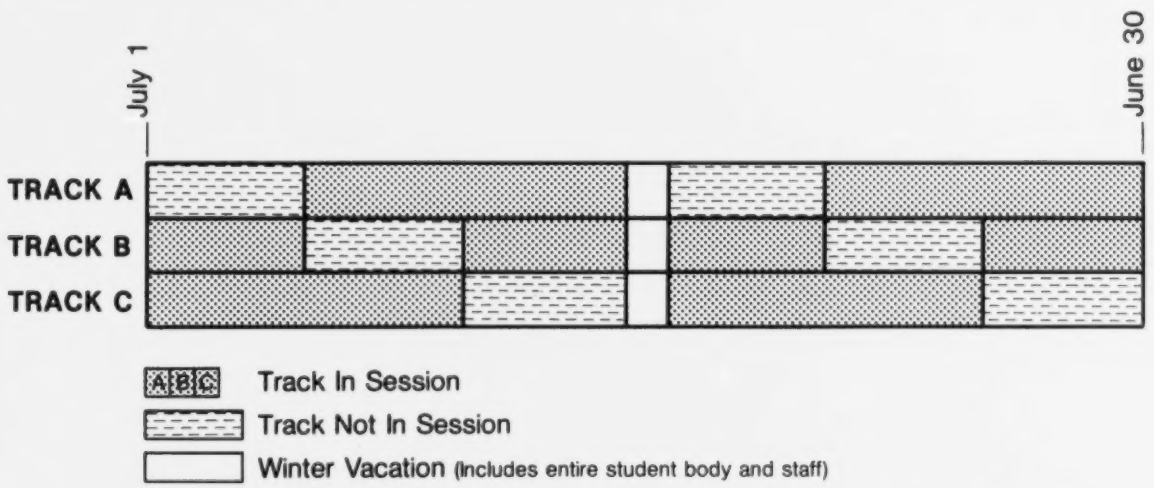
Fig. I-2. 45/15 Multitrack Plan

The Concept 6 Plan can be either single-track or multitrack. The single-track plan closely resembles the traditional school calendar. The multitrack programs usually contain three tracks. In this pattern, at any given time one-third of the student body and faculty are on vacation, allowing a 50 percent gain in building capacity. A school designed to accommodate 800 students, for example, can serve 1,200 students under this plan. Another advantage to Concept 6 is that it provides longer instructional blocks than do most other year-round programs. It therefore requires fewer openings and closings of school sessions and provides longer intersessions than other programs.

A major disadvantage of the Concept 6 Plan is the matter of the fewer instructional days discussed above. This problem can be remedied by creative use of intersession programs or independent study. The same disadvantages that were mentioned for the 45/15 Multitrack Plan are also true for the Concept 6 Multitrack Plan. The school is never vacated long enough for major repairs, and the teachers' sharing of rooms causes both an inconvenience and a storage problem.

A common modification to the Concept 6 Plan is the removal of the requirement that each pair of instructional terms be consecutive. In this version the four instructional blocks are arranged with vacation periods following each. However, the modified versions usually contain the same total number of school days as the original plan.

In California Concept 6 plans, including modified versions, constitute about 14 percent of all year-round education programs. This plan is particularly popular for high school programs; four of the eight high schools in the state operating year-round programs follow the Concept 6 Plan. The Concept 6 Plan is closest to the semester plan which high schools have traditionally followed, therefore, requiring the least change in curriculum. It also contains three instead of four tracks, making the scheduling of advanced or specialized classes somewhat easier. In addition, it more closely coincides with seasonal student activities than does any other year-round plan. A sample calendar for a Concept 6 Plan can be found in Figure I-3.



Source: Year-round Education Resource Guidebook. San Diego: San Diego County Office of Education, 1986.

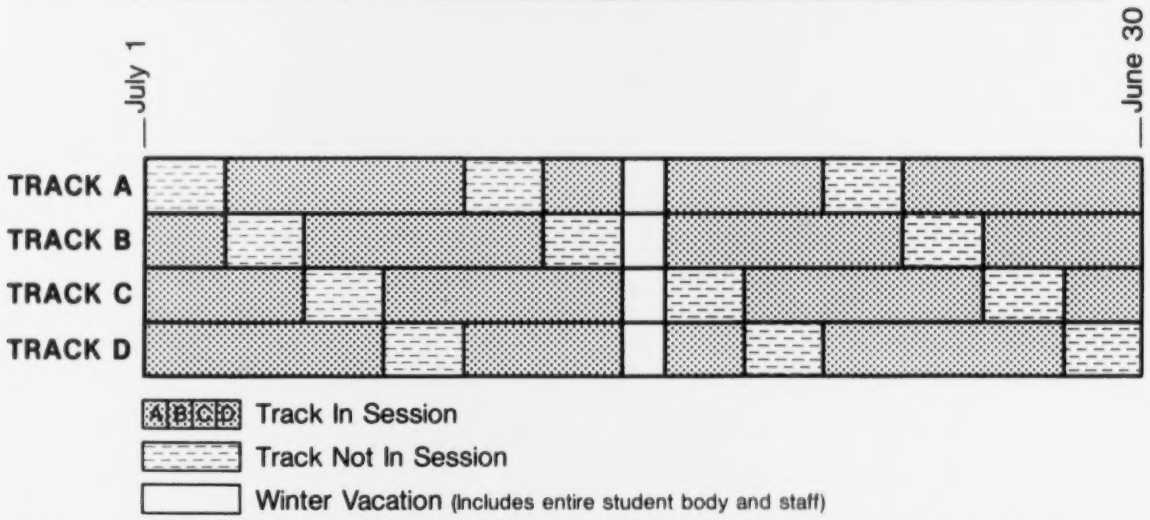
Fig. I-3. Concept 6 Plan

The 60/20 Plan

Under the 60/20 Plan teachers and students attend school for 60 days and then have 20 days of vacation, resulting in three instructional blocks. Although the plan can operate on a single track, it is most commonly found in the multitrack version, usually with four tracks. This plan is in essence a compromise between the 45/15 Plan and the Concept 6 Plan. Like the 45/15 Plan, it provides for 180 days of instruction and can increase school capacity by 33 percent; and like the Concept 6 Plan, it offers longer instructional terms and longer vacations. The 60/20 Plan has fewer openings and closings than the 45/15 Plan but more than the Concept 6 Plan.

The 60/20 Plan may exist in modified form, especially to accommodate holiday periods. Variations include such combinations as 59/15, 60/15, and

so on. In California 11 percent of year-round education programs are of the 60/20 type or a modified version of it. One such variation of the 60/20 Plan is known as the Orchard Plan, so named because it was first implemented at the Orchard Elementary School in Orem, Utah. The Orchard Plan has been proposed as a model for year-round education in California; however, it may not be appropriate for most school districts in the state. It provides only a 25 percent capacity increase and requires that teachers work on an 11-month contract. Among its advantages are common vacation periods, which ease the maintenance problem somewhat, and permanent classroom assignment for teachers. Its disadvantages include the complication of organizing the curriculum and tracking student progress in classrooms that contain students on all five tracks. Students are coming and going continually in each classroom and require virtually individualized instruction. A sample calendar for a 60/20 program appears in Figure I-4.



Source: Year-round Education Resource Guidebook. San Diego: San Diego County Office of Education, 1986.

Fig. I-4. 60/20 Plan

Other Year-round Education Plans

Although many configurations of instructional and vacation periods exist throughout the country, the remaining year-round programs in California include the 90/30 Plan, the Modified Traditional Plan, the Flexible Plan, the 25/5 Plan, and the 50/10 Plan. The 90/30, 25/5, and 50/10 plans are all modifications of the 45/15 Plan described previously. The Modified Traditional Plan stretches the traditional two-semester schedule by inserting a longer intersession into the winter vacation period, causing the fall semester to begin earlier and the spring semester to end later. The Flexible Plan is an individualized instruction program that

allows students to schedule the school year in their own way, provided they fulfill the minimum requirements for attendance. All of these year-round programs together represent the remaining 6 percent of schools in the state participating in year-round education.

It is not unusual for a school to operate a year-round program in combination with a traditional calendar. This arrangement further complicates the problems of multiple openings and closings of instructional sessions and storage of instructional materials, but it also offers an option for parents who desire to maintain the traditional pattern of schooling. Nearly one-third of the school districts operating year-round programs in California offer such combination programs.

A summary of the characteristics of the most popular year-round calendars and the traditional calendar is contained in Table I-1.

Table I-1

Summary of Typical Year-round and Traditional Plans

Characteristics	Type of plan			
	Traditional	45/15	Concept 6	60/20
Number of tracks	1	4	3	4
Number of instructional terms	2-4	4	4	3
Length of terms	45-90 days	45 days	43 days	60 days
Number of instructional days	180	180	172	180
Length of vacations	3 days-3 months	15 days	43 days	20 days
Number of vacations	1 long 2-3 short	4	2	3
Maximum capacity gain (in percent)	0	33	50	33
Features	Long instructional blocks Long vacation	Frequent vacations Frequent openings and closings	Long instructional blocks Short school year Long school day	Long instructional blocks Few openings and closings
Percent of year-round schools implementing plan	--	69	14	11

II. DESIGN OF THE STUDY

The findings in this report are based on data from a variety of sources. Information about year-round education programs was obtained from interviews, surveys, existing data bases, site visits, and California Assessment Program (CAP) files.

In preparation for the study, interviews were conducted with several leaders in year-round education. As a result of the interviews, five survey forms were developed specifically for this study and directed to school districts, schools, teachers, students, and parents. A copy of each is included in the Appendix.

The district survey, which was to be completed by the director of year-round programs, focused on reasons for establishing the year-round program, modifications necessary for implementation, district policies regarding year-round programs, costs and funding information, and eligibility for state incentive grants. Districts were also invited to submit copies of locally prepared cost analyses or program evaluation reports.

The school survey contained questions about the calendar configuration, assignment of students to tracks, use of intersession, administrative duties, maintenance programs, and level of satisfaction with the year-round program. A copy of the school calendar was also requested.

The district survey and the school survey were mailed to all districts and schools operating year-round programs in the state. The district rate of return was 94 percent; the school rate, 78 percent.

The teacher survey sought teachers' opinions about the year-round program in comparison with traditional programs and about the impact of the program on teachers and students. The teacher survey was mailed to principals of year-round schools for distribution to all the teachers at the school. A 10 percent random sample of year-round schools was selected. A stamped, self-addressed envelope was provided for direct return of the survey to the State Department of Education. The rate of return of the survey forms for the teachers was 42 percent.

Additional information about the professional staff was obtained from the California Basic Educational Data System (CBEDS). CBEDS is based on a single annual collection of staff and enrollment data from the state's public school districts. CBEDS serves many state and federal reporting requirements. Some of its data were analyzed to produce background information about year-round program participants.

The student survey consisted of questions regarding the student's likes and dislikes about the year-round program. The survey was distributed to students at the highest grade level at the school. Teachers administered the survey in their classrooms and then returned the forms to the Department. The student rate of return was 83 percent.

The parent survey was designed to gather information about the quality of the student's learning in the year-round school, the effects of the calendar on family activities, and the level of satisfaction with such programs. The parent survey, printed in English and Spanish, was distributed to these same students, who were asked to carry them home. A stamped, self-addressed envelope was attached to the parent survey to encourage its return. The rate of return was 30 percent. Student and parent surveys were distributed at the sites chosen for the visitations.

All surveys were analyzed in the same manner. Tallies and frequency distributions were computed for each variable. Where appropriate, summary statistics, such as means, were calculated. For certain data items that appeared to relate to the track configurations, separate analyses were performed for the single-track and multitrack schools.

Seven sites were chosen for visitation to provide an in-depth exposure to a variety of types of school calendars, socioeconomic settings, and levels of education. Usually, the visits consisted of a half-day meeting with district-level staff, including the director of the program and the business manager, and a half-day visit to the school. At the school efforts were made to interview several teachers and students as well as the principal. Visits were made to the Franklin Elementary School, Oakland Unified School District; Juarez-Lincoln Elementary School, Chula Vista City Elementary School District; Miller Elementary School and Farb Middle School, San Diego City Unified School District; Miles Avenue Elementary School and Huntington Park Senior High School, Los Angeles Unified School District; and Amesti Elementary School, Pajaro Valley Unified School District.

The academic achievement results reported in Chapter III were derived from the California Assessment Program (CAP) data for the years 1982-83 through 1984-85. CAP is a statewide testing program that provides to the public, the Legislature, and school districts annual evaluation information on the achievement of students in grades 3, 6, 8, and 12.

CAP tests were designed by California educators to measure the academic progress of children in California public schools. Test questions were based on the basic subject matter under study in all California school districts. The CAP uses matrix sampling; that is, each student is administered only part of a much larger test. The results from the short tests are combined into a school score based on the total test.

Because of the small number of year-round secondary schools, the achievement analysis was limited to elementary grades.[1] The performance of year-round schools on the CAP tests for grades 3 and 6 were compared with the results for traditional calendar schools for 1983 through 1985. Because of the large differences in background characteristics of the two groups, a multiple regression analysis was conducted to determine how the academic performance of year-round schools compared to predicted performance based on students' background characteristics. Analyses within the group of year-round schools were also conducted to determine how single-track schools compared with multitrack schools and how various groups of multitrack year-round schools performed.

Cost data were obtained from portions of the district and school surveys, site visitations, and discussions with year-round coordinators, school business officers, and superintendents. Cost analyses were solicited from all districts, but only one district (Oxnard Elementary) had recently conducted such a study. As a result, information presented here is drawn heavily from district surveys, from discussions with representatives of the Office of Local Assistance (OLA) in the Department of General Services, and from interviews conducted in the Los Angeles Unified, San Diego City Unified, Oakland Unified, Chula Vista Unified, Oxnard Elementary, and Pajaro Valley school districts. Estimates of costs were, whenever possible, based on OLA averages or estimates or on district experiences.

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[1] There were only 29 secondary year-round schools in 1983-84. Eight of these were included in the achievement analysis because they were junior high schools or middle schools with sixth grade students.

III. ACADEMIC ACHIEVEMENT IN YEAR-ROUND SCHOOLS

The purpose of this part of the study was to examine academic achievement in year-round schools in California. This chapter is centered on the following questions:

- How does the academic achievement of year-round schools compare with the achievement of schools on a traditional calendar?
- How does academic performance in year-round schools compare with predicted performance based on the background characteristics of the year-round schools?
- Are there differences in the background characteristics and academic achievement of single-track versus multitrack year-round schools?
- How do multitrack year-round schools in large urban districts compare with the remaining year-round schools in California as to background characteristics and academic achievement?

This chapter is organized into the following sections: a review of the literature on academic achievement in year-round schools, a description of the methodology for the achievement analysis, and a discussion of the findings.

Literature on Achievement in Year-round Schools

Various educational benefits have been claimed for year-round schools. Chief among these is the claim that students retain more during the shorter vacation breaks on a year-round calendar than they do over the three-month summer vacation. The shorter vacation breaks are thought to be especially beneficial for educationally disadvantaged students because of their greater achievement losses over the summer months.

Additional benefits claimed are that the division of the school year into four quarters encourages teachers to assess the progress of their students at regular intervals. Additionally, intersessions can be used to provide remediation or enrichment activities. Some schools have served their educationally disadvantaged students during intersession, thereby increasing the amount of instructional time.

A report to the New York State Board of Regents (1978) stated that educationally disadvantaged students lose about three to four months of their year's growth over the summer months compared with students scoring above grade level, who showed one month's growth during the summer. David and Pelavin (1978) also reported that disadvantaged students in compensatory education programs suffered losses in achievement over the summer.

SRI (Pelavin, 1979) conducted a thorough study of educational achievement in year-round schools in the Pajaro Valley Unified School District in California. The study was conducted after the program had been operational for four years. Students in grades 2, 5, and 7 were administered the Comprehensive Tests of Basic Skills (CTBS) in fall, 1976; spring, 1977; and fall, 1977. The rate of learning over the summer months was determined by examining the growth or loss from spring to fall. An analysis of gain scores resulted in only one significant difference. In second grade reading, students on a traditional calendar made greater gains than did students on a year-round calendar. Results of multiple regression analyses indicated that the school calendar (year-round or traditional) had little impact on a student's achievement test scores.

The results were analyzed separately for disadvantaged students. The disadvantaged students on a year-round calendar did not make greater gains than the disadvantaged students on a traditional calendar over the 12-month testing interval. This result may be due, in part, to the surprising fact that the disadvantaged students on a traditional calendar experienced little loss over the summer.

Merino (1983) reviewed the literature on year-round schools. She identified nine studies with a pretest/post-test design in which comparisons were made with a control group. Of those nine studies, only three showed gains favoring year-round schooling; and in two of those studies, the number of instructional days had been increased for students with special needs (e.g., bilingual or handicapped). Most of the studies reviewed by Merino showed no significant difference between students on a traditional calendar and students on a year-round calendar. Merino attributed the following as possible causes for lack of year-round achievement gains: (1) students and teachers in the year-round program may not be comparable to those on a traditional schedule; (2) the conversion to year-round schooling is often accompanied by curriculum revisions; and (3) frequently, the achievement of year-round schools is evaluated in the early stages of implementation when the difficulties of conversion may be hampering achievement. Others have cautioned that year-round students receive the same total number of days of instruction as students on a traditional calendar and that it may be difficult to show an achievement advantage for year-round schools without extending the school year.

Recent evaluations of year-round programs in Fresno, Los Angeles, and Oxnard districts were reviewed. The most comprehensive and methodologically strong evaluation of academic achievement in year-round schools was conducted by the Los Angeles Unified School District (Alkin, Atwood, Baker, Doby, and Doherty, 1984). It was shown that year-round schools consistently performed below the district's average in grades 5 and 6 on the district's

Survey of Essential Skills from 1981 through 1984. A similar pattern of year-round schools performing below the district average was reported for grades 8 and 12 on the achievement measures administered in those grades (CTBS and district competency tests). The year-round schools serve a student population similar to the district's PHBAO (predominantly Hispanic, black, Asian, and other non-Anglo) schools; thus, it was felt that the most reasonable comparison would be with that group. The PHBAO schools not on a year-round calendar were used as a comparison group after the two groups of schools were matched on demographic characteristics, including the percentage of minority students, the racial/ethnic composition of the schools, the poverty index, and the transiency rate. No significant differences were found between the matched group of schools in grades 5 and 6 over the four-year period from 1981 to 1984 on the district's Survey of Essential Skills. The evaluators concluded that "... the year-round school program is achieving its general goal of relieving overcrowded conditions without reducing educational quality or negatively affecting student's academic performance."

The Fresno Unified School District (1984) had ten year-round schools that have operated since the mid-1970s. The district operated several different multitrack year-round calendars (Concept 6, 60/20, and 45/15), and a single-track year-round calendar. An analysis of the achievement data on the California Achievement Test (CAT) for the year-round schools compared with the traditional calendar schools showed no consistent relationship between student achievement and the school calendar for 1981 through 1983.

The Oxnard Elementary School District (1986) has been operating year-round schools since 1976. It analyzed the grade 6 proficiency scores of each of the four tracks and the traditional track at the year-round schools. Differences were reported in the ethnic group composition, percentage of limited- or non-English-proficient students, and length of time students on each of the tracks have been enrolled in the district. The traditional track had the most stable population of students. The traditional track also had the second highest percentage of limited- or non-English-proficient students. One of the year-round tracks (Track B) was almost totally Hispanic. Students were put on this track if they had a record of absence in December and January.

The grade 6 proficiency scores of each of the five tracks (four year-round tracks and the traditional track) were compared for the 1984-85 school year. No statistical analyses were conducted; but from the pattern of raw score results, the authors concluded that year-round schools had an educational benefit. They reported that the white students in all but Track B performed at a higher level than the students assigned to the traditional track in reading and mathematics. For the Hispanic students, the results were mixed. In mathematics, the year-round tracks outperformed the traditional track, but the differences were very small. In reading, the traditional track outperformed the year-round tracks; but the differences were small except for Track B, which performed at a lower level than the other tracks.

Educators in year-round schools report educational benefits in the year-round calendar, chief of which is that students retain more over the shorter vacation breaks. However, most of the studies that have compared the achievement of students on a traditional calendar with those on a year-round calendar have not found significant differences between the two groups. The lack of achievement gains are not surprising when one considers that the year-round calendar usually does not increase the number of days of instruction.

Methodology Used in Analysis of Achievement

Student achievement data were derived from the California Assessment Program (CAP) results for the years 1982-83 through 1984-85. The CAP testing program is described in Chapter II.

The CAP tests for grades 3, 6, and 8, are administered in late April and early May, the time of the year for which empirical norms have been established. The CAP testing dates were examined to determine whether the year-round schools were testing under similar circumstances as traditional calendar schools. Two elements of the testing dates were examined: (1) the number of instructional weeks preceding the testing; and (2) the point in the session when testing occurs (e.g., right after a vacation). Table III-1 reports the information for a traditional calendar and the most popular year-round calendars. Because traditional and year-round calendars vary, districts should determine this information for each of their year-round schedules. The information in Table III-1 is based on year-round calendars commencing in July and on the spring CAP testing dates applicable for grades 3, 6, and 8. The testing dates for year-round schools are extended two weeks beyond the period set for traditional calendar schools, and these extended dates were used in determining the information for the table. In addition to the normal two-week extension for year-round schools, a few districts have received an additional two-week extension.

In most cases year-round schools tested after having as many instructional weeks as the traditional calendar schools. It may appear that schools on a Concept 6 calendar are at a slight disadvantage because in two of the tracks they have fewer weeks of instruction; however, on this calendar there are fewer days in the school year and the school day is lengthened to adjust for this. Hence, what appears to be less instruction prior to testing is actually similar in terms of total instructional time.

Testing on the year-round schedule requires greater organization. Different testing dates need to be scheduled to accommodate all tracks in a school, and for a few tracks there is only one week in which to test. Because some of the tracks need to test immediately after a vacation, students may be at a disadvantage. This problem can be minimized by delaying testing until the end of the testing interval for those students.

Table III-1

Spring CAP Testing Dates for Traditional and Year-round School Calendars

Calendar	Point in year when testing occurs	Point in session when testing occurs	Comments
Traditional	Week 29.5 - 32	Tests 3.5 months after Christmas vacation.	
Year-round 45/15			
Track A	Week 27.5 - 32	Tests from .5 - 5th week of session.	
Track B	Week 30 - 32	Must test immediately after vacation. They only have 2 weeks to test.	Must test immediately after a break, with only two weeks to test.
Track C	Week 31.5 - 34	Tests last 2.5 weeks of a session.	Tests with slightly more instruction than the traditional calendar.
Track D	Week 31 - 33.5	Tests from the 3.5 - 6th week of session.	
Concept 6			
Track A	Week 24.5 - 29	Tests after being in session 7 weeks.	Tests after having fewer weeks of instruction.
Track B	Week 27 - 29.5	Tests first 3.5 weeks after coming back to session.	Tests right after vacation and with slightly fewer weeks of instruction.
Track C	Week 32.5 - 33.5	Tests at end of week session just before vacation.	Has only one week to test.

(Continued on page 26)

Table III-1 (Continued)

Calendar	Point in year when testing occurs	Point in session when testing occurs	Comments
60/20			
Track A	Week 28 - 32.5	Tests after being in session 3.5 - 8 weeks.	
Track B	Week 28.5 - 33	Tests first 3.5 weeks after a vacation.	
Track C	Week 32 - 33	Tests the last week of a session.	Has only one week to test.
Track D	Week 31.5 - 36	Tests from the 7.5 - 12th week of the session.	Tests with more weeks of instruction than the traditional calendar.

Four school districts, including the Los Angeles Unified School District, have requested an additional two-week extension beyond that already given to year-round schools. In these districts it should be possible to test all tracks at a testing time equivalent to that for the traditional calendar schools.

For achievement analyses, schools were classified as year-round if they operated on a year-round calendar in 1984-85. Identification of year-round schools was based on information from the California State Directory of Year-Round Education, 1984-85, and updated with information from the district and school surveys administered as part of this study.

Because most of the year-round schools have operated their programs for several years, the achievement of students should not be affected by recent program implementation. Over 82 percent of the schools had initiated their year-round program by the 1981-82 school year. A large number of schools, about 40 percent, implemented their year-round program during the 1980-81 or 1981-82 school years.

Because of the small number of year-round secondary schools, the achievement analysis was limited to elementary grades. The following analyses were conducted with the use of CAP data:

1. The background characteristics (socioeconomic index, percent AFDC, and percent of limited- or non-English-speaking students) of year-round schools in California were compared with the characteristics of schools on the traditional calendar.

2. The academic performance of students in year-round schools in reading and mathematics was compared with traditional calendar schools for 1983 through 1985.

3. A regression analysis was performed to determine how the academic performance of students in year-round schools compares with predicted performance based on the background characteristics of year-round schools.

The following analyses were conducted to examine differences within year-round schools:

1. The background characteristics and standardized residual achievement scores for the single-track year-round schools were compared with multitrack year-round schools.

2. The background characteristics and standardized residual achievement scores of multitrack year-round schools in large urban districts were compared with the remaining multitrack schools in California.

Findings of the Study on Academic Achievement

Year-round programs are typically placed in the fastest-growing districts within the state and in the fastest-growing regions within those districts. Three background variables were examined to identify any systematic differences between the year-round and traditional calendar schools: socioeconomic status (SES); percent of students whose families are receiving assistance under Aid to Families with Dependent Children Program (AFDC); and percent of limited- and non-English-speaking students (LES/NES).

Data on the socioeconomic index and language proficiency of students are reported by classroom teachers on the grade 3 and grade 6 CAP test forms. The socioeconomic index is a three-point scale based on the occupational category of parents or guardians. The lowest point on the scale, 1, is used for unskilled persons, including persons on welfare. Skilled employees are coded 2, and professionals and semiprofessionals are given the highest rating, 3. The percent AFDC was reported by school districts in October, 1983.

As shown in Table III-2, the year-round schools are serving lower socioeconomic communities, a higher proportion of families receiving AFDC, and about twice as many limited- and non-English-speaking students than the traditional calendar schools. These large differences in background characteristics reflect differences in the communities in which year-round

schools are located. Given these differences, it is likely that year-round schools are also different in other characteristics not examined here, such as the percent of minority students or transiency rate. The effect of these differences in background characteristics on the academic achievement of year-round schools should be considered when the results are interpreted.

The racial or ethnic group enrollment in year-round schools is reported in Table III-3. Year-round schools serve a much larger percentage of minority students than the statewide average. Hispanic students account for 65 percent of the year-round student enrollment compared to 29 percent for the state as a whole.

Table III-2

Background Variables of Year-round and Traditional Calendar Schools

Variables	Year-round schools	Traditional calendar schools	Total, state
Grade 3	(N = 216)	(N = 4,146)	(N = 4,362)
SES Index	1.85	2.04	2.03
% AFDC	20	16	16
% LES/NES	29	11	12
Grade 6	(N = 171)	(N = 3,660)	(N = 3,831)
SES Index	1.86	2.03	2.02
% AFDC	20	15	15
% LES/NES	15	7	7

CAP Test Results in Reading and Mathematics

The CAP reading and mathematics results were examined for grades 3 and 6 for the year-round and traditional calendar schools. Three years of achievement results were examined (1983 through 1985). The raw data for this analysis consist of school scaled scores. These scores can range from

100 to 400. The difference in scaled scores over the two-year period from 1983 to 1985 was also reported. These results are shown in Table III-4 and displayed graphically in figures III-1 and III-2.

Table III-3

Enrollment in Year-round Schools by Racial or Ethnic Group

Racial or ethnic group	Percent of year-round enrollment	Percent of total enrollment
White (not Hispanic)	21	52
Hispanic	65	29
Black (not Hispanic)	5	10
Asian	5	7
Filipino	3	2
American Indian	>1	>1
Pacific Islander	>1	>1

Note: Data collected in October, 1985, by CBEDS.

The year-round schools consistently performed below the traditional calendar schools in both reading and mathematics; however, this finding was not unexpected given the differences in background characteristics of the two groups. Although they scored lower, year-round schools showed greater gains over the two-year period.

If the 1985 scale scores are converted to the percent of items correct, students in grade 3 of year-round schools answered 71 percent of the reading items correct compared to 78 percent correct for the traditional calendar schools. In grade 3 mathematics, students in year-round schools answered 78 percent of the items correct compared to 82 percent correct for the traditional calendar schools.

For grade 6 reading, students in year-round schools answered 70 percent correct, whereas students in traditional calendar schools answered 74

percent correct. In mathematics the percent correct was 63 for students in year-round schools and 66 for students in traditional calendar schools.

Table III-4

California Assessment Program Test Results for Year-round and Traditional Calendar Schools

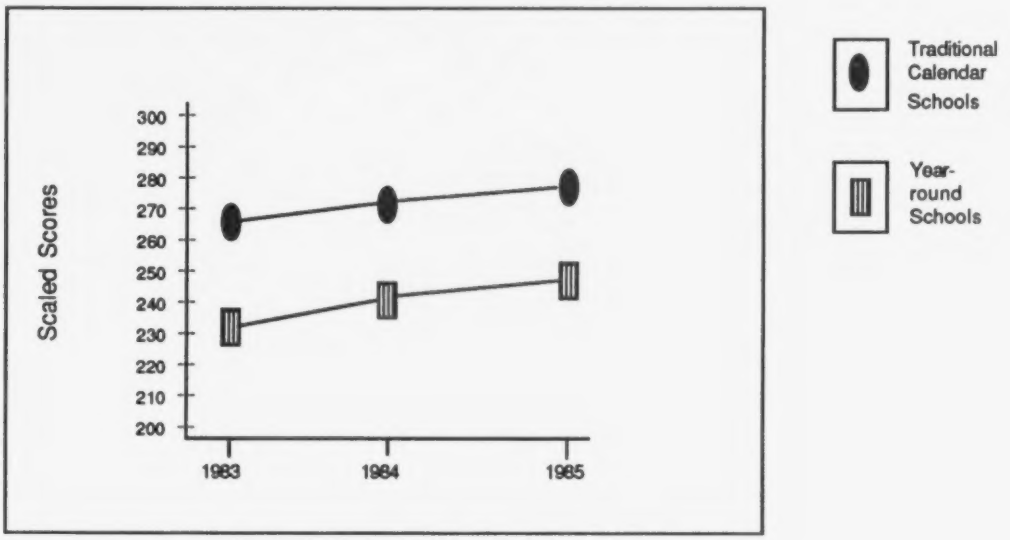
	Year-round schools				Traditional calendar schools			
Category	1983	1984	1985	Change	1983	1984	1985	Change
Grade 3								
Reading	238	244	251	+13	271	275	281	+10
Mathematics	248	256	264	+16	273	279	284	+11
Grade 6								
Reading	233	230	242	+ 9	258	254	260	+ 2
Mathematics	245	245	253	+ 8	263	264	268	+ 5

Notes: Year-round schools: Grade 3 = 216 schools, Grade 6 = 171 schools. Traditional calendar schools: Grade 3 = 4144 schools, Grade 6 = 3660 schools.

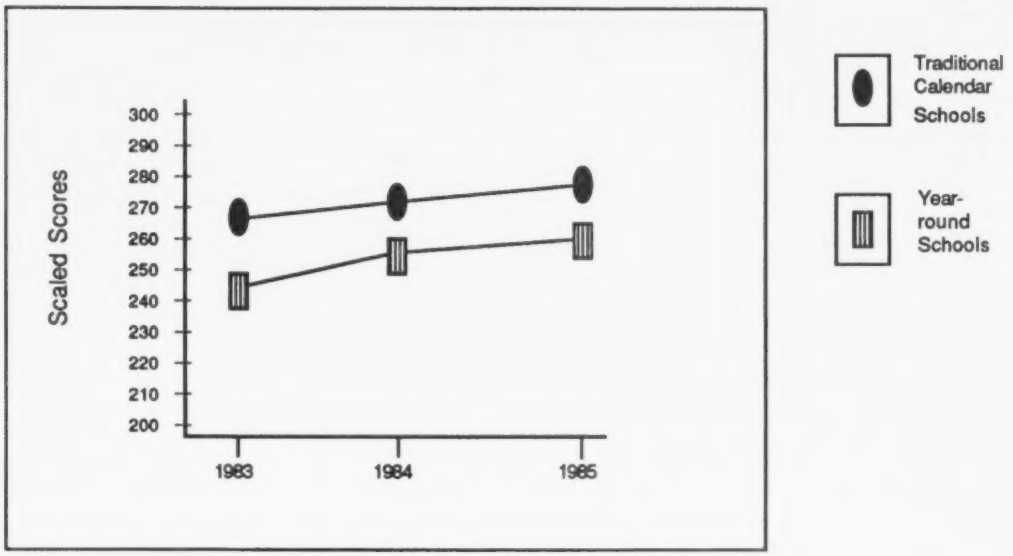
The results are presented in mean scaled scores.

Standardized Residuals in Reading and Mathematics

Because of the differences in background characteristics between year-round and traditional calendar schools, a multiple regression analysis was conducted to statistically control for the background characteristics of the year-round schools. The multiple regression analysis shows how well the year-round schools performed relative to other schools with similar background characteristics. In multiple regression analysis the actual performance of a school or group is compared with the performance predicted according to a set of predictors. The predictors used in this analysis were SES index, percent of families receiving AFDC, and percent of LES/NES students. These are the same predictors used to form comparison score bands for the CAP test results. The predicted scores are subtracted from the actual score and standardized, with a mean of 50 and a standard deviation of 10. The resulting score is called a standardized residual. Schools with

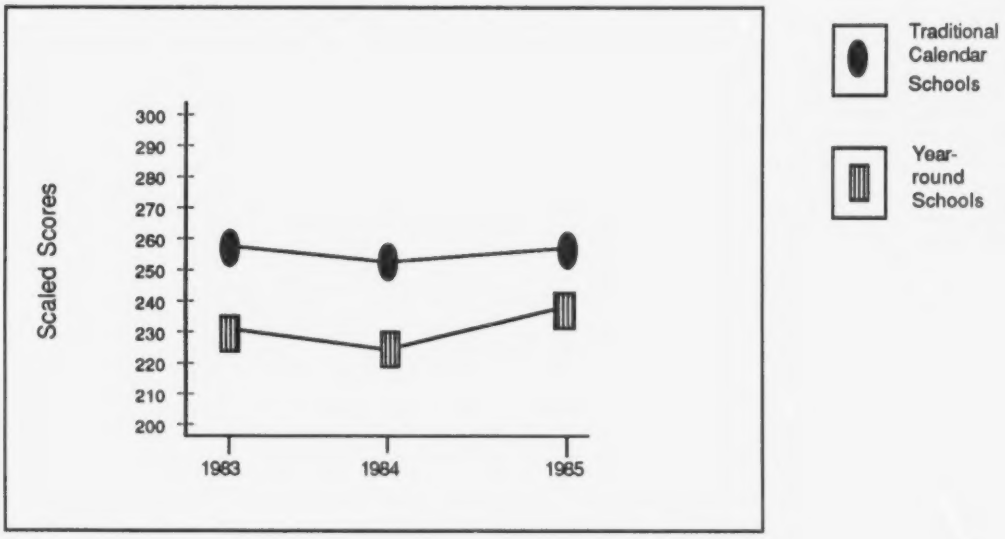


Reading



Mathematics

Fig. III-1. Grade 3 CAP Test Results for Year-round and Traditional Calendar Schools



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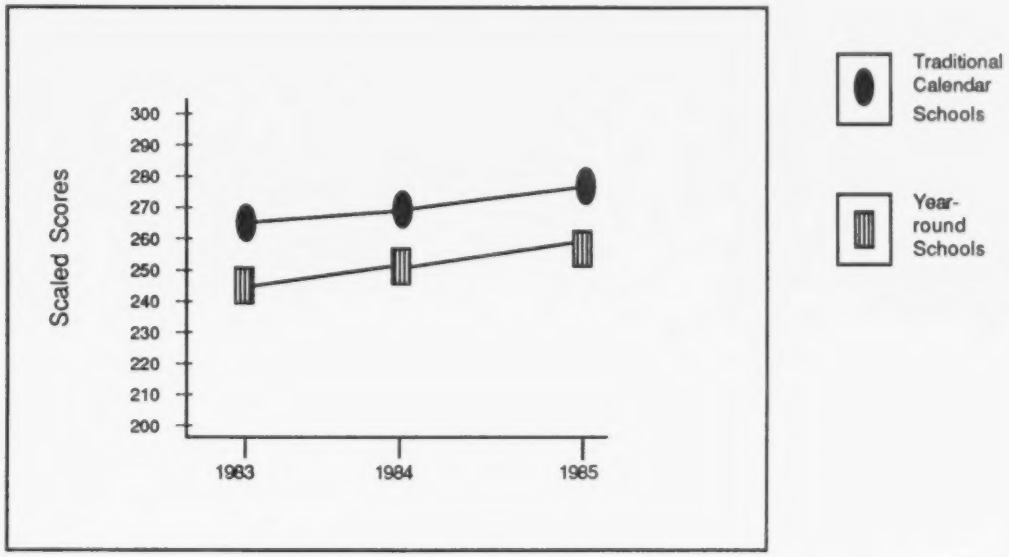


Mathematics

Fig. III-2. Grade 6 CAP Test Results for Year-round and Traditional Calendar Schools

standardized residuals below 50 are scoring below the performance level predicted for them on the basis of their background characteristics.

The standardized residuals for the year-round schools are presented in Table III-5 and displayed in figures III-3 and III-4, where standardized residual scores below 50 are shaded to indicate that schools are performing below prediction. As shown in Table III-5, the year-round schools have shown improvement but are performing below the level predicted for them in both reading and mathematics in grades 3 and 6.

The results from the regression analysis, together with the longitudinal test scores for year-round and traditional calendar schools, indicate that year-round schools are narrowing the gap between year-round and traditional calendar schools. However, year-round schools, although improving, are still performing below the level predicted on the basis of their background characteristics.

Table III-5

Standardized Residuals for the California Assessment Program Test Results for Year-round Schools

Grade level	1983	1984	1985
Grade 3 (N = 216)			
Reading	45.8	47.0	46.6
Mathematics	46.5	47.6	47.7
Grade 6 (N = 171)			
Reading	45.3	45.9	48.3
Mathematics	46.2	46.8	48.2

Note: Residuals were standardized with a mean of 50 and a standard deviation of 10.

Results in Single-Track Versus Multitrack Schools

The background variables and standardized CAP residuals of single-track and multitrack year-round schools were compared. Multiple regression analyses were conducted to determine how well the two groups of year-round

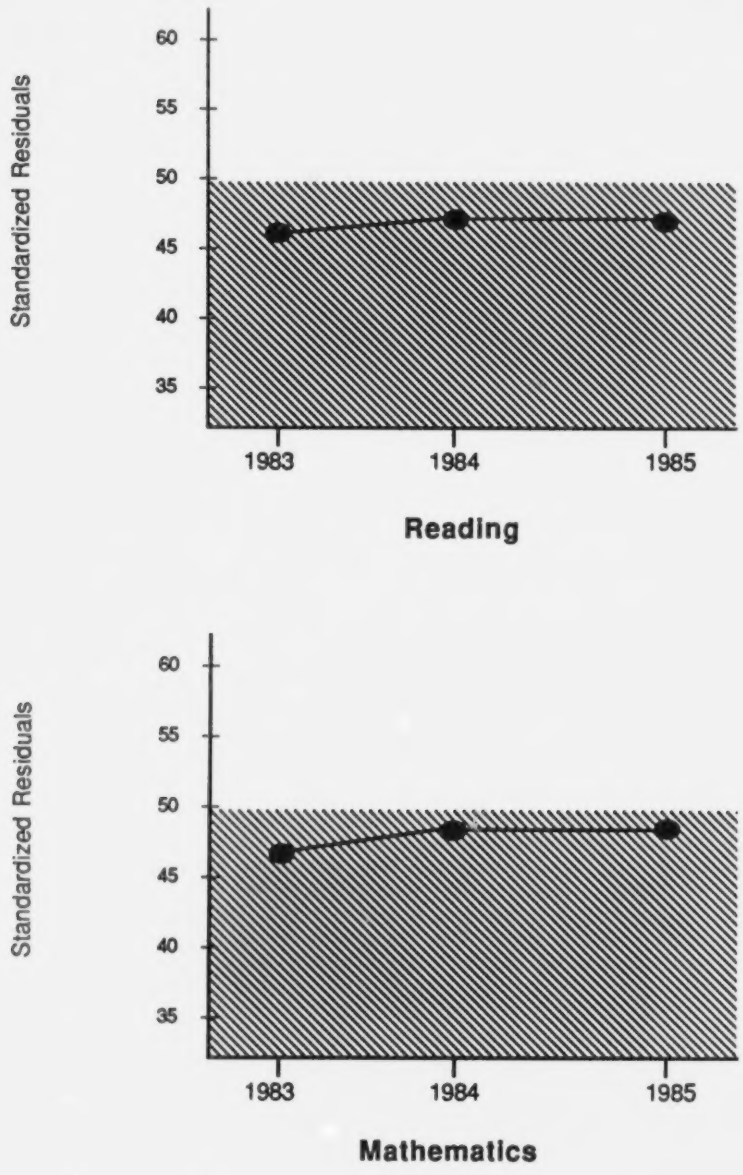
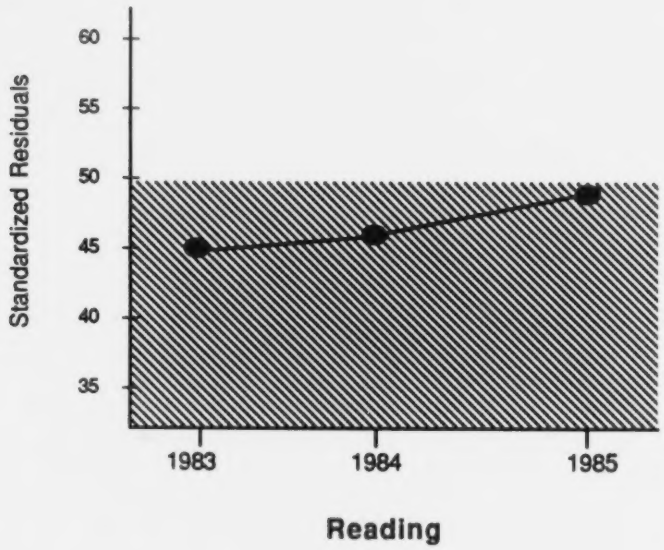


Fig. III-3. Standardized Residuals on Grade 3 CAP Test for Year-round Schools



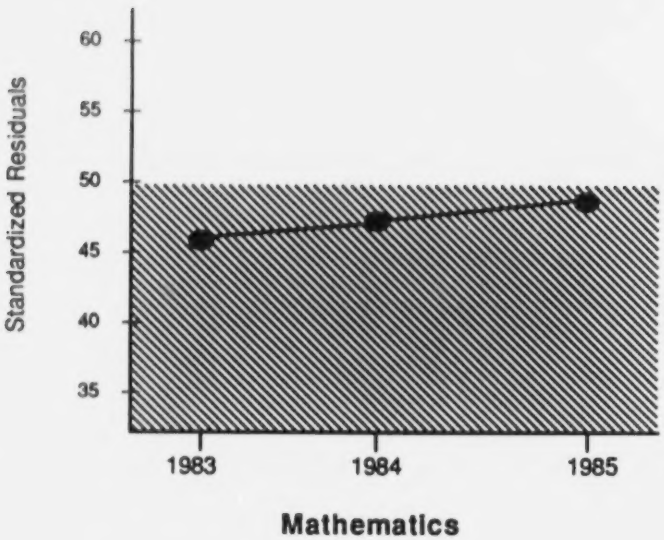


Fig. III-4. Standardized Residuals on Grade 6 CAP Test for Year-round Schools

schools performed relative to other schools with similar background characteristics. The same predictors used for the regression analysis of the combined year-round schools were used for this analysis: SES index, percent of families receiving AFDC, and the percent of LES/NES students. The results are shown in Table III-6 and are displayed in figures III-5 and III-6, where standardized residual scores below 50 are shaded to indicate that they are performing below prediction.

There were large differences in the background characteristics of the two groups. Single-track year-round schools are similar to the statewide average in terms of background variables. Multitrack year-round schools served communities with a much higher percentage of limited- and non-English-speaking children (LES/NES). In third grade the average percentage of LES/NES in multitrack year-round schools is 41; for single-track year-round schools, 12. Multitrack year-round schools also served communities with a lower socioeconomic status and a higher percentage of families receiving AFDC.

When these background characteristics were statistically controlled, single-track year-round schools were found to be performing about the same as or somewhat better than schools with similar background characteristics. Multitrack year-round schools were performing below the predicted level.

The strong performance of the single-track year-round schools indicates that the year-round calendar can be associated with achievement at or above the level of schools with similar background characteristics. The much lower performance of the multitrack schools relative to their background characteristics is more troublesome. It is not known what causes this lower performance. It could be due to factors related to the multitrack calendar (such as changing classrooms, attending school on hot summer days) or to background variables unrelated to the multitrack calendar which are found in the multitrack schools, such as the percent of minority students, high transiency rate, and the special problems of communities experiencing such rapid growth.

Results of Multitrack Schools in Large Urban Districts Versus Other Multitrack Schools

In an attempt to understand more about the lower performance of multitrack year-round schools, the multitrack year-round schools in the largest urban districts in the state were analyzed separately and compared with the other multitrack schools. It was thought that because urban districts share unique characteristics such as a larger proportion of minority and LES/NES students and lower SES characteristics, it would be useful to determine the extent to which those characteristics account for lower performance.

The background characteristics and standardized residuals for the two groups of schools are presented in Table III-7. The multitrack year-round schools in the Los Angeles Unified, San Diego City Unified, Fresno Unified,

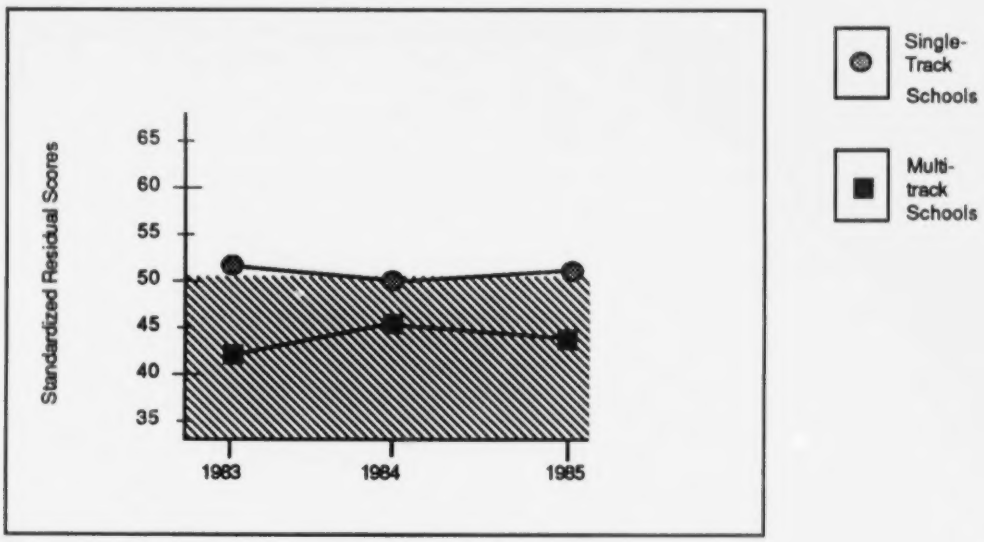
Table III-6

Background Variables and Standardized Residuals for the CAP Test Results for Single-Track Compared with Multitrack Year-round Schools

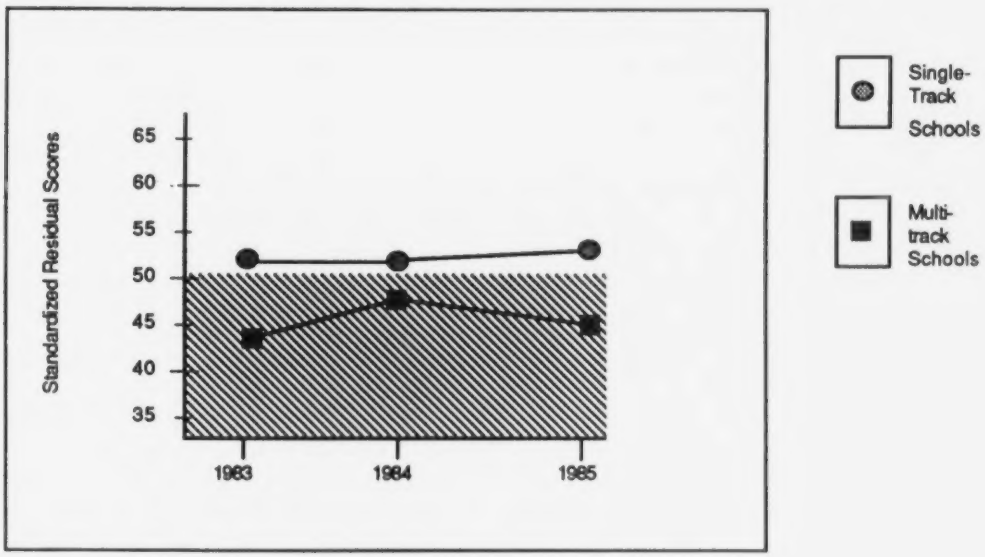
Category	Single-track year-round schools	Multitrack year-round schools
Grade 3	(N = 74)	(N = 121)
SES Index	2.09	1.69
% AFDC	15	24
% LES/NES	12	41
Reading CAP Standardized Residuals		
1983	50.6	42.3
1984	50.0	44.9
1985	50.9	43.9
Mathematics CAP Standardized Residuals		
1983	50.5	43.3
1984	50.1	45.6
1985	51.5	44.9
Grade 6	(N = 63)	(N = 92)
SES Index	2.07	1.68
% AFDC	15	24
% LES/NES	8	20
Reading CAP Standardized Residuals		
1983	52.3	40.1
1984	51.3	42.2
1985	53.1	44.7
Mathematics CAP Standardized Residuals		
1983	53.9	40.7
1984	52.8	42.4
1985	53.1	44.4

Notes: Residuals were standardized with a mean of 50 and a standard deviation of 10.

A few schools were not included in this analysis because, (1) they did not respond to the survey and it was not known if they were operating single-track or multitrack programs; or (2) they operated on both a traditional calendar and a year-round calendar.

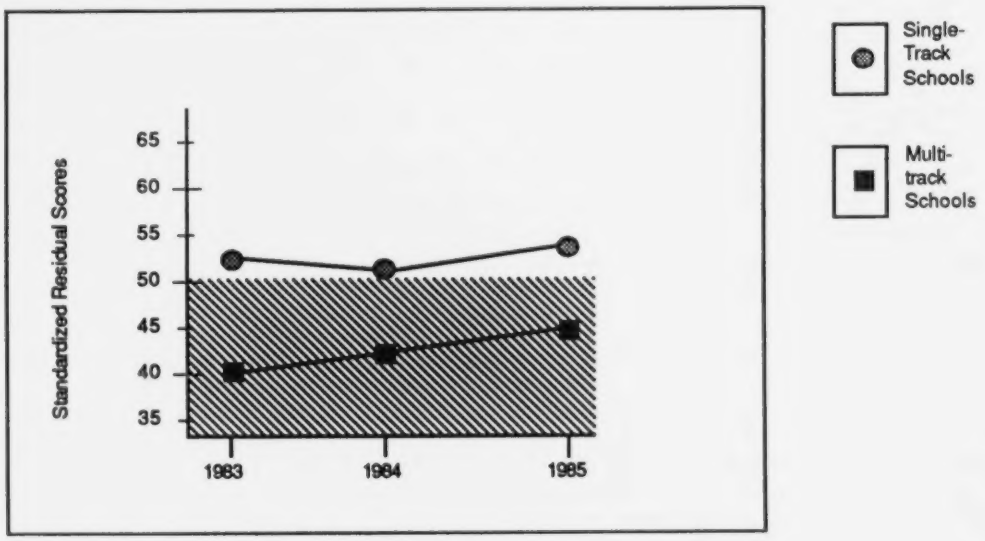


Reading

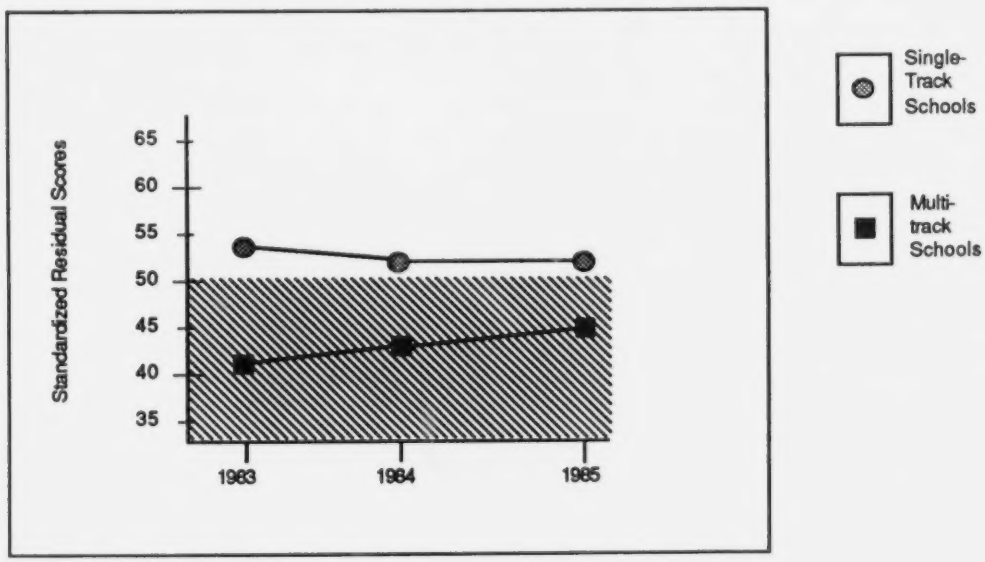


Mathematics

Fig. III-5. Standardized Residuals on the Grade 3 CAP Test for Single-Track and Multitrack Year-round Schools



Reading



Mathematics

Fig. III-6. Standardized Residuals on the Grade 6 CAP Test for Single-Track and Multitrack Year-round Schools

and Oakland Unified school districts made up the large urban district group. The San Francisco Unified and Long Beach Unified school districts were not included because they did not have any multitrack year-round schools. Most of the schools in the large urban district group are in the Los Angeles Unified School District.

As is shown in Table III-7, the multitrack year-round schools in the large urban districts are serving 46 percent LES/NES students at grade 3 compared to 31 percent in the other multitrack schools. The socioeconomic level of the large urban district schools is much lower than the other multitrack year-round schools. In reading, the urban multitrack year-round schools are performing one standard deviation below the level of schools with similar background characteristics compared with the nonurban schools, which were performing at or slightly below the predicted levels. Both groups of multitrack schools were performing below the predicted level in mathematics, with the large urban districts performing lower, relative to their background characteristics, than the nonurban districts.

Summary

Major differences exist in the background characteristics of year-round and traditional calendar schools. Year-round schools in California serve lower socioeconomic communities, a higher proportion of minority students and families receiving AFDC, and about twice as many limited- or non-English-speaking students as the traditional calendar schools.

Year-round schools were performing below the level predicted for them on the basis of their background characteristics. The standardized residual scores for grade 6 improved from 1983 to 1985 but were still slightly below the level predicted.

When the single-track and multitrack year-round schools were examined separately, it was found that the single-track schools had background characteristics similar to statewide averages and were performing at or slightly above the level predicted based on their background characteristics. In contrast, multitrack schools were found to be serving communities with low socioeconomic status and a high percentage of LES/NES students. Even when these background characteristics were statistically controlled, the multitrack year-round schools performed below predicted levels.

When the multitrack year-round schools were divided into two groups, those in large urban districts were found to be performing well below the level predicted for them in reading, whereas the nonurban schools were performing close to or at their predicted levels. Both groups performed below their predicted level in mathematics, with the year-round schools in large urban districts performing further below prediction compared with the nonurban schools.

Many of the year-round schools in California are not achieving at predicted levels. This situation is most likely due to factors unrelated to

Table III-7

Background Variables and Standardized Residuals for CAP Test Results for Multitrack Schools in Large Urban Districts and in Remaining Multitrack Schools

	Multitrack schools in large urban districts[a]	Other multi-track schools
Grade 3	(N = 79)	(N = 42)
SES Index	1.59	1.86
% AFDC	28	15
% LES/NES	46	31
Reading CAP Standardized Residuals		
1983	39.4	47.7
1984	40.9	52.6
1985	41.6	48.1
Mathematics CAP Standardized Residuals		
1983	42.7	44.7
1984	43.5	49.6
1985	44.2	46.3
Grade 6	(N = 61)	(N = 31)
SES Index	1.54	1.96
% AFDC	30	13
% LES/NES	24	12
Reading CAP Standardized Residuals		
1983	36.6	47.2
1984	37.8	50.8
1985	41.4	51.3
Mathematics CAP Standardized Residuals		
1983	40.2	41.8
1984	40.9	45.3
1985	43.7	45.7

Note: Residuals were standardized with a mean of 50 and a standard deviation of 10.

[a] Multitrack year-round schools from the Los Angeles, San Diego, Fresno, and Oakland Unified school districts.

the year-round calendar of the school but which may be related to the special needs of the population served in year-round schools and the demographics of the communities in which year-round schools have been placed. The strong performance of the single-track year-round schools indicates that the year-round calendar is a viable educational option that can be associated with achievement at or above predicted levels.

IV. COST ANALYSIS

If year-round education is agreeable to the staff, parents, and community, is it feasible from a district's cost perspective? Are incentives offered by the state sufficient to induce districts to try year-round schooling? Will other approaches to housing students be more or less costly to the state's taxpayers? Are alternatives available in a timely and reliable fashion? These and other questions related to expenses of year-round education are addressed in this chapter, and some recommendations concerning the further implementation of year-round approaches are offered.

Because almost all existing year-round programs are located at the elementary school level, most of the information presented here is drawn from data or cost experiences at that level. Conclusions, therefore, pertain specifically to that level, although they may in some instances also apply to the secondary level.

The Existing Situation

Enrollment in California's elementary schools is projected to increase markedly over the next few years. Current estimates exceed 100,000 new students, largely at the elementary level, over each of the next five years. These increases probably will not be evenly distributed, and many districts will be faced with an urgent need for increased numbers of classrooms.

Initially, students may be provided for by combining grade levels, redefining attendance boundaries, and utilizing portable classrooms. Eventually, however, at least some districts will face a need for new schools. Estimates of construction costs to house excess enrollment over the next five years range from the $2.8 billion calculated by the State Department of Finance to more than $5 billion estimated by other agencies.

Year-round schools are a possible means for meeting the need for increased classroom space. At the elementary level a number of districts already have year-round programs in operation, and some information is available on implementation costs. Year-round programs designed to intensify use of existing facilities typically provide for 20 percent to 35 percent more students. As a result, costs of implementing year-round programs in periods of rapidly increasing enrollment should be compared to costs of providing portable or permanent structures to house students.

For cost analysis it is necessary to determine what proportion of the students are occupying classrooms at any given time. If one-third of the

students are on vacation at all times, then at full capacity three students can be served in space formerly allotted for two, a potential cost savings of one-third over new construction or portables. Similarly, if one-fourth of the student body is out of school at one time, 33 percent more students can be educated at that facility than under traditional facility usage. The proportion of students on vacation can be determined from the number of tracks (with the assumption that only one of the tracks is not in school at a time). For example, a four-track system would provide classroom space for three-fourths of the students at one time. The associated model, usually the 45/15 Plan, must distribute vacation time so that one-fourth of the students may be out of school at any one time.

In many instances educational benefit can be derived from using only a portion of the potential space gain to provide housing for increased enrollment. Available classroom space on the various tracks can then be used to provide intersessions (programs offered to students during their vacation periods) and programs designed to meet special needs. Recent incentive legislation employs a target level of 15 percent increased enrollment over initial capacity, thus allowing, under most models, substantial extra space for program development.

One factor of concern is the maintenance of high-quality education during transition to year-round education. This question arises because, as more tracks are added, the total enrollment of the school must be quite large to avoid extensive use of combined classes. Ideally, each track should contain at least one class at each grade level unless other arrangements are made for ensuring educational quality. For example, if average class size were maintained at 30 students in a particular district, a six-grade elementary school would need 180 pupils per track, excluding kindergarten, to approximate efficiency. Thus, for an effective four-track program, between 700 and 800 students would be required. As a result, introduction of year-round programs should be carefully considered in small schools. Alternatively, a situation such as that described may be taken as an opportunity to lower class size. If this approach is financially feasible, it may well improve teacher and parental acceptance of year-round programs.

Incentives for Overcrowded Districts

In 1983 the Legislature enacted Senate Bill 81 (Chapter 684) and Senate Bill 813 (Chapter 498), which provide financial incentives for districts experiencing overcrowding to use existing facilities rather than relying on the state to finance new construction. To qualify for one of these plans, a district must have submitted an approvable application under the State School Building Lease-Purchase Program. If the project is determined to be eligible for funding for new construction as a result of overcrowding, a district is eligible for either but not both of the two incentive programs. In 1986, SB 81 provided approximately $235 for K-6 students, $320 for 7-8 graders, and $365 for pupils in grades 9-12 who are housed in excess of an existing facility's capacity, no matter what alternative to new construction

is followed.[1] These amounts are equal to one-half the interest amount the state would have paid on bonds necessary to finance a new school. No district has applied for SB 81 funding, presumably because applicant districts must decrease eligible enrollment for new school construction by the number of students claimed under the chapter. This portion of the incentive package is due to expire on January 1, 1988.

The second, a portion of SB 813, provides $25 for every pupil attending a year-round school operated to alleviate overcrowding. To qualify, a school board must certify that a school is being operated year-round because of overcrowding and have an approvable application on file with the State Allocation Board. Claims under this chapter do not reduce the district's eligible enrollment for new construction. Both of these incentives and the incentive described in the following paragraph are available on a yearly basis as long as a district can substantiate overcrowding.

Under SB 327 (Chapter 886, Statutes of 1986), districts may apply for funding up to a maximum of $125 for 1986-87 for every pupil in a school operated on a year-round schedule. This amount is in addition to the $25 available under SB 813. Actual dollar incentives are intended to be adjusted annually for inflation and are determined by the Office of Local Assistance (OLA)[2] according to a formula which takes into account the number of pupils housed in excess of the school's capacity, the number of square feet allowed at that grade level, the cost of new construction in that locale, and the cost of land in the area.

Year-round operation may necessitate installation of air-conditioning and/or insulation in districts which experience high summer temperatures. Because expenditures of this type probably constitute the largest cost deterrent to year-round schools, the Legislature has established incentives in recent legislation intended to lessen or eliminate that cost.[3] Funding for these purposes is described more thoroughly in the section on transition costs.

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[1] These amounts would vary from year to year depending on construction costs and interest rates.

[2] The Office of Local Assistance (OLA), a unit of General Services overseen by the State Allocation Board, should be differentiated from the Local Assistance Bureau (LAB), a unit of the State Department of Education.

[3] AB 1024 (Chapter 1440, Statutes of 1985); AB 694 (Chapter 1339, Statutes of 1986), which supercedes AB 2926; and AB 4245 (Chapter 423, Statutes of 1986).

Costs for Year-round Schools

An analysis of costs associated with the use of a year-round model must take into account four major factors: avoided costs, transition costs, projected operating costs, and incidental differences in operating expenses which result from unanticipated effects of conversion to year-round education. In addition, expenditures and savings may differ from school to school or from district to district as a result of variations in the model, the applicability of the model to the individual situation, use of intersessions, school size, and other variables. Differences in ways unhoused students are currently accommodated, such as the use of multipurpose rooms or busing to other schools, and the extent to which enrollment growth is already present rather than expected, can introduce cost differentials between districts.

In this section we will consider the effects of cost factors on multitrack schools. Because costs of single-track programs are more comparable to the costs of traditional programs, only differences will be noted.

Avoided Costs

Multitrack year-round programs are commonly employed to alleviate the effects of overcrowding or anticipated enrollment growth. Other measures which may serve the same purpose include building new schools, using portables, converting to double sessions, and transporting students to schools with available space. The latter two approaches may be applicable to certain situations. For those districts with unused space, busing represents a possible but often unpopular alternative; and, although generally disliked, double sessions can essentially double classroom space. Usually, however, year-round schools are seen as an alternative to portable classrooms or new construction.

Portable classrooms, either leased or purchased, represent a commonly used method of handling enrollment growth and are far less expensive than permanent buildings. The yearly per student cost at the district level ranges from a minimum of $67 for state rental units to $200 per year or more for lease/purchase units. State rental units are subject to waiting periods of up to two years and are available on a year-to-year basis to overcrowded districts. Lease/purchase units have associated delivery, installation, and furnishing charges but can, under conditions of overcrowding, be financed entirely by the state whereby a 40-year payback period at zero percent interest is provided under the State School Building Lease-Purchase Law of 1976. This approach may require three to four years of processing time. If year-round schools are employed, the costs to the state of financing portables may also be regarded as avoided. Finally, districts may avoid delays by purchasing units outright, often with bank financing at close to the prime rate. Annual costs may be as low as $234 per student for "dry

units."[4] Table IV-1 specifies estimated costs of portables at the district level.

Table IV-1

Estimated Costs of Portables - District Level

Category	Annual cost	Instal-lation	Delivery	Furnish-ings	Total	Annual per pupil cost	
Lease (SDE)[a]							
Dry unit	$2,000	included	included	included	$2,000	$67	
						Per Pupil	
						First-year cost	Annual cost
Lease Purchase							
Dry unit	$6,000	$3,000	$1,000	$2,500	$12,500	$417	$200
Wet unit	$9,250	$12,000	$1,000	$2,500	$24,750	$742	$308
Purchase Outright[b]	Unit cost						
Dry unit	$35,000	$3,000	$1,000	$2,500	$41,500	$451	$234
Wet unit	$50,000	$12,000	$1,000	$2,500	$65,500	$851	$334

[a] Leased dry units are available through the emergency classroom program on a year-to-year basis at a cost of $2,000/yr., including delivery, installation, and furnishings. In the past delivery has been delayed, often by periods of eight months to two years. The Legislative Analyst reports that the situation is improving but that delays are still excessive.

[b] Assumes bank financing at 8.5% for five years.

Under the Lease-Purchase Law the state has, in the recent past, absorbed all costs of new construction. The district has experienced only transition and incidental costs. During the 1986 legislative session, this situation was changed radically. Districts are now expected to levy a fee on new residential and commercial developments and to pay a portion of any new construction. This legislation has the result of reducing costs to the

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[4] "Dry units" do not have sinks or other requirements for running water or sewer connections. "Wet units" do require the above.

state, transferring approximately half of construction costs to commercial and residential developers.[5]

The Office of Local Assistance estimates $100 per square foot as an average cost of school construction, including land, permits, construction, equipment, architectural fees, furnishings, and other related costs.[6] Standard sizes eligible for state funding have been 55 square feet per student enrollment - elementary; 75 square feet per student enrollment - 7th and 8th grades; and 85-87 square feet per student enrollment - 9th through 12th grades.[7] According to this formula, a new 12 classroom elementary school (360 students) would cost approximately $1.98 million. A 24-classroom elementary school (720 students) would cost nearly $4 million. If a school site is purchased at market value, these amounts could more than double. Per pupil avoided construction costs to the state are estimated in Table IV-2. The estimated minimum saving averaged across the state is $486 per year for each student for whom construction costs are avoided. If site purchase is involved, average savings might run as high as $840 per pupil at the elementary school level. For urban districts experiencing exceptionally high land costs, savings on elementary school construction could run as high as $2,254.[8]

Transition Costs

Transition costs include costs clearly associated with the introduction of year-round schooling and not recurring. A feasibility study may be necessary; substantial administrative time must be devoted to planning for and implementing the transition; teacher in-service training requires release time; and communication with the community will require staff involvement. These endeavors should require relatively minor expenditures.

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[5] Developers' fees may also be used for other approaches to housing excess students, such as the purchase of portables.

[6] After examining recent new construction projects, which averaged $93.12 per square foot total costs, the Department of Finance concluded that $100 per square foot would cover most new construction projects. Exceptions might include new school construction for which new sites would need to be purchased, especially in urban areas.

[7] Under SB 327 (Chapter 886, Statutes of 1986), maximum allowable areas of school building construction were increased to 107 percent of these previous allowable areas.

[8] In this case a figure of $1 million per acre was used, a figure widely quoted as representing an expected cost in Downtown Los Angeles. These calculations do not attempt to include forgone tax income from school properties.

Table IV-2

Estimated Costs of New School Construction - State Level

Per Student Cost of Construction[a]

Elementary school ($100/sq. ft. x 55 sq. ft.)	$ 5,500
Junior high school ($100/sq. ft. x 75 sq. ft.)	$ 7,500
High school ($100/sq. ft. x 85 sq. ft.)	$ 8,500

Possible Per Student Cost of Site: (Assumes market value of $200,000 and $1,000,000 per acre and occupancy rate of 500 students per 10 acres)

[(10 acres x $200,000/acre)/500 students]	$ 4,000
[(10 acres x $1,000,000/acre)/500 students]	$20,000

Range of Expected Per Pupil New Construction Costs:

	Without land cost	With $200,000 land cost	With $1 million land cost
Elementary school	$5,500	$ 9,500	$25,500
Junior high school	$7,500	$11,500	$27,500
High school	$8,500	$12,500	$28,500

Range of Expected Per Pupil Annualized Costs Avoided by Year-round Programs

(Assumes 8.5 percent interest for land and construction and a 40-year lifetime for construction)

	Without land cost	With $200,000 land cost	With $1 million land cost
Elementary school	$486	$ 840	$2,254
Junior high school	$663	$1,016	$2,431
High school	$751	$1,105	$2,519

[a] The Office of Local Assistance estimate of $100 per square foot is an average that includes land, permits, inspections, architectural fees, construction, equipment, furnishings, and other related costs. Land costs incorporated in this average are relatively low because funded construction is often an expansion of existing facilities and because school sites are, in many instances, already owned or available at reduced prices from developers. If sites are purchased at market value, costs may escalate markedly. Square footage per pupil of facility space is based on 1986 standards.

Most districts find that portable storage units and filing cabinets must be purchased to facilitate teacher movement between rooms. This also constitutes a relatively minor expenditure. Table IV-3 provides estimates of these expenses and of those for air-conditioning.

The major capital cost associated with transition to year-round education is the cost of air-conditioning in areas which have intense summer heat. In response to this need, the Legislature has appropriated $13.5 million of Outer Continental Shelf Oil Fund revenues (AB 1024), to be used for air-conditioning and insulation for schools operated year-round. It has been recommended that the funds be allocated on a point system which takes into account average temperature of the area, percent of overcrowding, and the number of students enrolled at the specific year-round school. Assembly Bill 694 (1986) also designates $30 million from the Petroleum Violation Escrow Fund for districts requiring air-conditioning or insulation in year-round schools. In addition, Assembly Bill 4245 (1986) authorizes an amount not to exceed $40 million over two years as part of the 1986 general obligation bond measure. Although these allocations seem quite substantial, the Los Angeles Unified School District has estimated a cost of up to $220 million to install air-conditioning or air-cooling if all schools in crowded areas are converted to year-round programs. Although guidelines for air-conditioning incentives are still being formulated, it is currently expected that the state will pay the full cost of planning and installation. Schools will probably be required to continue year-round for two years after project completion in order to avoid repaying air-conditioning costs.

Expenses incurred during a transition to year-round schooling should be compared with the costs of moving and installing portable classrooms or to a portion of the costs of opening a new school. When viewed in this light, transition costs, with the exception of air-conditioning, seem minimal.

Projected Operating Costs

Operating expenses can normally be divided into fixed and variable costs. Fixed costs are those which are independent of the size of population served. Variable costs are experienced on a per student or per day basis. Although some fixed and variable costs may vary from district to district, most budget items would be allocated similarly. Average per student cost would be equal to fixed costs divided by the number of students served plus per student variable costs plus per day variable costs, adjusted for the number of students served. Because year-round education provides for an increase over traditional education in the number of students served, average costs would be expected to decline. A question remains, however, about the effect of the per day costs. If the extra proportion of time the school is open equals the extra proportion of students, the effect would, in general, be the same as that of per student variable costs. That is, if the school is open one-third more time but serves one-third more students, most cost effects would be the same on a per pupil basis.

Differences might well be seen in utility costs because three-month summer utility bills may, in areas of intense heat, exceed three-month

Table IV-3

Estimated Costs of Conversion to Multitrack Year-round Schools

Category	Per classroom	Per student[a]	Per student yearly cost	Per Unhoused student yearly cost
Cost of Air-Conditioning Unit and Installation:[b]				
Elementary	$16,000	$400	$42[c]	$168
Secondary	$20,000	$500	$53	$212
[Portables	$10,000	$250	$26	$104]
Release Time for Teacher Inservice, Training,[d] Planning, and Feasibility Study[e]	$400	$10	$10	$40
Portable Storage Cabinets and Files	$900	$23	$6[f]	$24
Totals				
Elementary	$17,300	$433	$58	$232
Secondary	$21,300	$533	$69	$276
Expected district contribution:	$1,300	$33	$16	$64

[a] Assumes 30 students per classroom x 4/3 to adjust for 25 percent additional unhoused students.

[b] Air-conditioning estimates are based on those provided by Roger Rasmussen, Independent Analysis Unit, Los Angeles Unified School District; and Henry Jones, Deputy Controller-Finance, also LAUSD.

[c] Cost annualized over 20 years at 8.5%. These costs will probably be absorbed at the state level.

[d] Three days at $100/day per teacher.

[e] Administrator time estimated at $100/classroom.

[f] Annualized over 5 years at 8.5% interest.

average costs during the traditional school year. Because most areas of rapid enrollment increases are in the southern portion of the state, utility costs may be a major factor. In addition, maintenance costs may be higher due to a requirement to pay overtime or employ outside contractors to complete repair and cleaning tasks within extremely limited time frames. Excess maintenance costs incurred from wear and tear of intensive use should be covered by the increase in student-based revenues.

Variable costs include teacher salaries; salaries for special teachers assigned on the basis of student population; administrative, clerical, and maintenance salaries for employees assigned on the basis of time or number of students; utilities; consumable supplies; and transportation. Fixed costs cover textbooks, nonconsumable supplies, and furnishings (which may now be purchased on a classroom basis). Table IV-4 compares expected per student cost parameters for year-round schools, newly constructed schools and portable classrooms. In the case examined, the student population has been increased by one-third as has the number of days of operation to simplify comparison of variable costs. Because some costs decrease on a per student basis while others increase, per pupil expenses will be close to the same level under year-round and traditional programs. Much depends, however, on the ingenuity of district and site administrators in managing the budget to avoid excess costs.

Incidental Differences in Operating Expenses

A number of districts have reported that unexpected factors have contributed to cost differences between traditional and year-round programs. Although these effects may differ from district to district in occurrence and order of magnitude, they are worth noting.

The Oxnard Elementary School District reports reduced student absences for year-round tracks. The K-8 excused absence rate was 4.8 percent for 1985-86 school year versus 5.7 percent for students in traditional calendar programs and 6.0 percent for K-8 students across the state. The unexcused absence rate for K-8 students was 1.4 percent versus 1.8 percent for traditional and a California average of 2 percent. Site administrators' responses to the survey conducted for this study were mixed regarding reduced student absences. About half of the multitrack principals indicated an improvement in student attendance in year-round programs. For the single-track schools, about 30 percent agreed.

It should be noted that a decline in student absences results in an increase in a.d.a. funding for the district but an increased cost for the state.

Oxnard also noticed a reduction in vandalism and burglary at schools which operated year-round. School personnel are on site not only during the summer months but also until midnight when custodians are working. Vandalism and burglary costs reportedly shrank from $82,540 in 1975-76 to less than $10,000 during the 1984-85 school year.

Table IV-4

Differences in Operating Costs for Year-round, New Construction, and Portable Classrooms

Category	45/15, 4-track year-round elementary school (potential expansion of 33%)	Newly constructed facility (Assume proportion equal to expansion under year-round school.)	Portables leased and rented (Assume expansion equal to year-round school.)
Teacher salaries	Per-student basis (i.e., 1/3 increase)	Per student basis (1/3 increase)	Per student basis (1/3 increase)
Teacher benefits	Possible decrease on per pupil basis if teachers take 12 month contracts	1/3 increase	1/3 increase
Administrative salaries	Ten-month position increased to 12 months plus administrative substitute, approximately 1/3 FTE increase	1/3 increase	Little or no increase
Administrative benefits	Little increase (per pupil cost savings)	1/3 increase	No increase (per pupil cost savings)
Support personnel salaries	Increase for clerical; assume 1/3 increase	1/3 increase	Increase; possibly less than 1/3
	Increase for maintenance; assume 1/2 increase due to increased time period and overtime pay	1/3 increase	1/3 increase
Furnishings	Decrease on per pupil basis but rise in replacement costs	1/3 increase	1/3 increase
Texts	Decrease on per pupil basis but increased replacement frequency	1/3 increase	1/3 increase

(Continued on page 54)

Table IV-4 (Continued)

Category	45/15, 4-track year-round elementary school (potential expansion of 33%)	Newly constructed facility (Assume proportion equal to expansion under year-round school.)	Portables leased and rented (Assume expansion equal to year-round school.)
Office equipment	Limited increase (decrease on per pupil basis)	1/3 increase	Little increase (per pupil cost savings)
Utilities	Expected increase equal to difference between summer air-conditioning and 1/3 of nine month utilities	1/3 increase	1/3 increase

Nearly two-thirds of school administrators who responded to the school survey believe that teacher attendance is markedly better in both single-track and multitrack year-round programs. Teachers may experience less fatigue when vacations are interspersed throughout the year.

Findings of the Study on Costs

In general, districts do not conduct complete analyses of the financial impact of year-round schools. Because year-round education so clearly constitutes a major cost saving over new construction, detailed examination does not often appear necessary. Historically, the majority of those studies which have focused on year-round costs have looked at excess costs on a per-school basis. As a result, a misperception exists that year-round programs are necessarily more expensive to operate than traditional programs. More recently, analyses by Stanford Research Institute of the Pajaro Valley Unified School District (1978) and by the Oxnard Elementary School District (1985, 1986) have indicated that year-round education need not be more expensive than traditional programs to operate. Indeed, both of these studies demonstrated a cost savings over traditional approaches, 4 percent in Pajaro Valley and 9 percent in Oxnard.

Personnel Costs

As part of this study, the San Diego City Unified School District compared personnel costs of equal sized year-round multitrack, single-

track, and traditional schools.[9] Pairs of matched schools were selected on the basis of student enrollment. Large schools (with enrollments of approximately 1,000 students) were available for all three types, while only traditional and single-track schools were found with enrollments between 200 and 300. Staff positions included those associated with the instructional, site direction, counseling, health, custodial, and noon duty programs--in other words, essentially all full-time and part-time personnel assigned to the school. Expenditures were projected on the basis of average salaries for each of the positions to eliminate differences attributable to individual assignments.

The average personnel cost for large traditional schools was $1,430 per student. Single-track year-round schools had essentially the same cost, $1,432 per pupil. The average multitrack personnel cost was $1,495 per pupil, an increase of less than 5 percent over the average for large traditional schools (see Table IV-5). The cost differential appeared attributable, in part, to the fact that custodial positions are authorized on the basis of square footage rather than school enrollment. Because one of the multitrack schools had a large building and grounds, per student costs were also examined when custodial services were removed. The remaining difference, 2.7 percent, could be traced to slightly less efficient student distribution (one extra teacher per school) and to increased costs of lunchtime supervision (Table IV-6). It should be noted that multitrack year-round schools are often associated with lower socioeconomic level neighborhoods because schools in these neighborhoods also tend to be overcrowded. Such schools should have greater than average representation of resource personnel. As a result, some increase in personnel for multitrack programs may be regarded as related to student population characteristics rather than to choice of program.

The cost per student for smaller schools, both single-track and traditional, was much greater. As can be seen from Figure IV-1, smaller schools were much more costly on a per pupil basis than any of the larger programs, including multitrack year-round configurations. Traditional schools in this sample averaged $1,681 per student in personnel costs. Single-track programs were even more expensive, averaging $1,779 per pupil, while personnel costs for larger schools were less than $1,525 per student in every instance. Differences would appear to be attributable to economies of scale.

In the case of the smaller schools, cost differences could not be attributed to custodial assignment. A 5.8 percent increase for single-

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[9] This analysis was suggested and provided by Henry Hurley, Director, Budgets and Cost Controls Department, San Diego City Unified School District. Because a small number of schools were studied, actual personnel costs across the school district cannot be determined. Nevertheless, the information does provide an indication of what personnel costs can be in certain situations. Multitrack personnel costs may be proportionately less in other even more cost-effective circumstances.

Table IV-5

Comparison of 1985-86 Personnel Costs for Selected Single-Track, Multitrack, and Traditional Elementary Schools

Large elementary schools	Enrollment	Projected expenditures	Per pupil cost	Average per pupil cost
Traditional Schools				$1,430
School A	1,195	$1,683,916	$1,408	
School B	1,064	$1,523,156	$1,431	
School C	1,057	$1,499,390	$1,421	
School D	880	$1,284,738	$1,459	
Single-Track Schools				$1,432
School E	1,118	$1,600,786	$1,432	
School F	1,070	$1,532,090	$1,431	
MultiTrack Schools				$1,495
School G	1,039	$1,582,673	$1,522	
School H	903	$1,325,215	$1,468	
Small elementary schools	**Enrollment**	**Projected expenditures**	**Per pupil cost**	**Average per pupil cost**
Traditional Schools				$1,681
School I	291	$489,395	$1,683	
School J	283	$475,356	$1,679	
Single-Track Schools				$1,779
School K	287	$481,659	$1,678	
School L	263	$493,879	$1,879	

Note: The above analysis was suggested and provided by Henry Hurley, Director, Budgets and Cost Controls, San Diego City Unified School District.

Table IV-6

Comparison of 1985-86 Personnel Costs for Selected Single-Track, Multitrack, and Traditional Elementary Schools, Exclusive of Custodial Costs

Large elementary schools	Costs of Custodial Services Removed[a]			
	Enrollment	Projected expenditures	Per-pupil cost	Average per pupil cost
Traditional Schools				$1,371
School A	1,195	$1,631,200	$1,364	
School B	1,064	$1,451,479	$1,364	
School C	1,057	$1,447,636	$1,372	
School D	880	$1,217,755	$1,383	
Single-Track Schools				$1,374
School E	1,118	$1,525,566	$1,365	
School F	1,070	$1,479,465	$1,382	
Multitrack Schools				$1,409
School G	1,039	$1,486,952	$1,431	
School H	903	$1,252,391	$1,387	
Small elementary schools	**Enrollment**	**Projected expenditures**	**Per-pupil cost**	**Average per pupil cost**
Traditional Schools				$1,578
School I	291	$458,324	$1,575	
School J	283	$447,277	$1,580	
Single-Track Schools				$1,667
School K	287	$450,563	$,1570	
School L	263	$464,181	$1,765	

[a] The above analysis was suggested and provided by Henry Hurley, Director, Budgets and Costs Controls, San Diego City Unified School District.

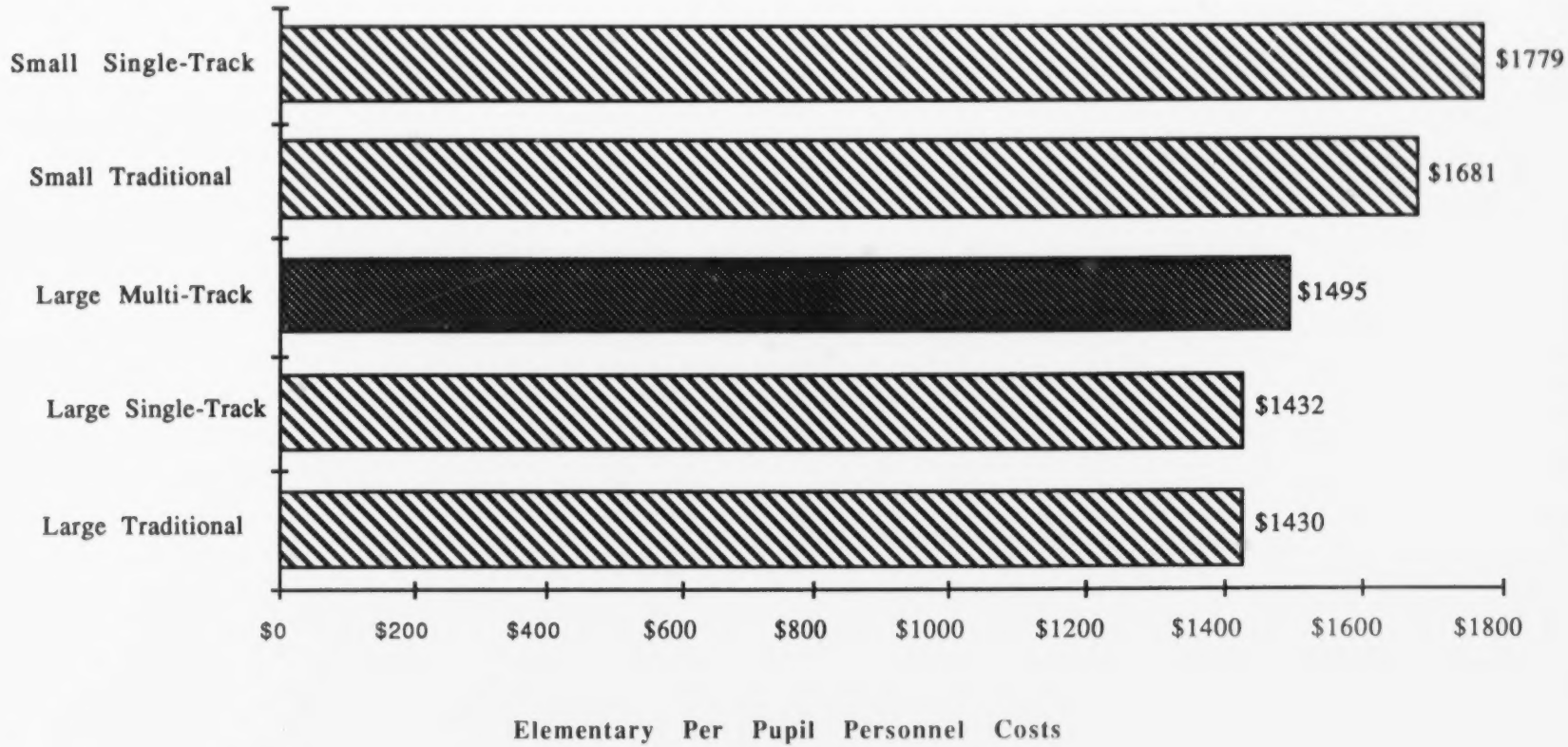

Fig. IV-1. Comparison of Personnel Costs for Selected Single-Track, Multitrack, and Traditional Elementary Schools

track schools was due to higher instructional and site direction costs at one of the schools. Excess costs appeared unrelated to the single-track program as the other school of this type had per pupil costs equal to its traditional comparisons.

District Differences in Cost Factors

District representatives, usually year-round coordinators, superintendents, or business officers, were asked to indicate areas for which a cost differential was noted between year-round and traditional programs. Answers to this question do not indicate cost differences on a per pupil basis. Instead, responses represent excess costs of running a year-round program serving more students than the traditional program with which it is compared. Table IV-7 indicates the percent of respondents, noting a cost differential for each specific item. With the exception of utilities costs, administrative salaries, and support personnel salaries, none of the possible cost increases was experienced by more than 50 percent of the districts. Evidently, costs of year-round education are dependent to some extent on the particular organization and implementation of the program in each district or individual school. Conversations with district coordinators also consistently indicated differences in local expenditures. Excess expenditures appeared in many cases to be more closely related to community needs than to any requirement of the year-round program. Indeed, it is likely that, with creativity and cooperation from all concerned, it is possible to reduce the operating costs of year-round education to fit an existent per student budget. It is also probable that, at least initially, tailoring a program in such a manner that it gains acceptance with the community will not result in the most cost efficient approach.

Use of Incentives

Few districts have taken advantage of year-round incentives. A number of the 42 districts employing year-round programs have not been able to establish the degree of overcrowding necessary for placement on the waiting list for new school construction. Others have been simply unaware of the possible incentives. In 1985-86, for instance, only 12 school districts, which included 131 schools, received the $25 per student incentive grant available for schools operating year-round because of overcrowding. Discussions with district representatives indicated much confusion about the incentive programs and requirements for qualifying. Conversations with representatives of the Office of Local Assistance, however, indicated that information is provided via district mailings in regard to all incentives.

An approvable application for funding for new construction is the basic requirement for qualifying for the $25 per student incentive payment program. Currently, the State Allocation Board must certify that a district has filed an approvable application. The application is then sent to the Department of Education for payment of the $25 per student incentive.

Table IV-7

District Reported Cost Differences Associated with Year-round Education

Category	Percent of respondents indicating increase*
Utilities	69.7
Support Personnel Salaries	60.6
Administrative Salaries	51.5
Portable Storage	48.5
Bus Transportation	48.5
Air-Conditioning	42.4
Administrator Substitutes	33.3
Special Education (Self-Contained)	30.3
Benefits and Retirement	30.3
Supplies	21.2
Released Time for Teacher In-Service Training	21.2
Compensatory Education/Categorical	18.2
Feasibility Study	15.2
Office Equipment	15.2
Curriculum Revision	12.1
Teacher Salaries	3.0
Insurance	0

* Shows increased costs on a per school basis rather than a per student basis.

Although no district has filed for payment under SB 81, applicants would be required to file an application for new school construction because of overcrowding. Applications would be considered midway through the approval process for new school funding. Waiting time simply for Phase I approval was as much as two years as of April, 1986. At that time 93 applications were awaiting Phase I approval for growth, and 239 applications were awaiting Phase II approval for growth. After approval for new school construction, a district would be given the option of taking the year-round incentive. A district desiring to take advantage of the SB 81 incentive would be required to reduce its application for new school construction by the number of students claimed under the incentive. SB 81 incentives could be made more appealing to districts if the incentives were available within the same time frame that SB 813 incentives are available. In addition, because SB 81 incentives are set at one-half the financing cost avoided by the state, it would be in the state's interest to encourage districts to accept this incentive rather than remain on the waiting list for new school construction, especially for situations in which enrollment increases are expected to be relatively transitory.

Almost 52 percent of the districts surveyed reported that they were eligible for new construction funding (21.2 percent), funding for reconstruction/rehabilitation (3 percent), or both (27.3 percent) under the State School Building Lease-Purchase Law of 1976. According to the survey, 33 percent of respondent districts (11 districts) intend to apply this year for funding under Chapter 689 (alternatives to new construction). Forty-two percent (14 districts) said they would apply for the Chapter 498 incentive ($25 per student enrolled in a year-round school). Respondents were, however, unclear that they could not qualify under both programs. When asked whether use of a year-round approach had eliminated or reduced a need for school construction, 27.3 percent responded affirmatively and 60.6 percent negatively. Several commented that year-round programs had delayed a need for construction but that overcrowding was so extreme in the areas utilizing year-round programs that construction might still be necessary.

In conclusion, incentives have not been effective in encouraging many districts to try year-round education as an alternative to other methods of handling enrollment growth. If incentives are to induce participation in year-round programs, districts must be better informed. In addition, because the opportunity to opt for year-round programs under SB 81 rather than new construction occurs after a district has already waited approximately two to three years for construction funding, year-round approaches are less likely to be selected. At least a year of planning and preparation time is required to institute a year-round program. If funding were provided for preparation when a district initially applied for construction funds, implementation of year-round approaches would be more likely.

In addition, three improvements need to be made in the dissemination of information regarding year-round incentives. First, districts should receive a synopsis of explanatory information about the incentive programs yearly. This brief should clearly state possibilities and requirements for qualifying. In addition, as much information as is readily available should be presented regarding current legislation and expectations for the continuation of various statutes. This information should be provided in addition to timely notice of changes in year-round incentives.

Secondly, overcrowded districts would profit from developing as much expertise in this area as possible. A single person within each district should be responsible for collecting and maintaining information about year-round incentives, preferably the same administrator knowledgeable about construction and housing alternatives.

Finally, information regarding year-round incentives is housed in a variety of locales. Certain information is easily available only from the Office of Local Assistance. Other details germane to this report were only determined by contacting the State Department of Education, outside consul-

tants,[10] the Legislative Analyst, or representatives of school districts[11]. Changes are frequently made in incentive law, in the allocation of funding for these programs, and in qualification requirements. Thus, it is difficult for small districts to be up-to-date. A clearing-house for information is needed which can provide ready answers to questions on this topic and provide assistance in determining a district's revenues under year-round incentive programs. If year-round education makes sense for the state from a cost perspective, a major effort should be made to induce districts to examine the incentive package carefully before opting immediately for new construction. In short, incentives must not only be attractive but be presented in such a way that they will be easily adopted.

Summary

Gaining a clear picture of the cost effects of year-round education is, at best, a confusing process. Incentive packages provided by the state confound the confusion by displacing costs to the state level. For example, although construction of new schools is generally deemed the most expensive approach to overcrowding, costs have not been apparent at the district level. Districts willing to wait three to four years may pay little for new schools or portables because the state bears most of the cost. As incentives for year-round education increase, and as districts are asked to participate in the funding of new schools through developer's fees, a growing advantage to year-round education programs may become apparent to district officials.

Currently, new construction costs the state more than $486 dollars per student per year over 40 years even when site cost is not included. Portables cost the state more than $200 per student per year, although districts may pay only $67 per pupil per year for emergency rental units, including installation, furnishings and delivery. In comparison, real costs of year-round schools at the elementary level are estimated at $42 per student per year for air-conditioning and approximately $16 per student additional transition costs for the first year.[12] Operating costs are

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[10] Notably John Mockler of Murdoch, Mockler and Associates.

[11] Roger Rasmussen of the Independent Analysis Unit, Los Angeles Unified School District; Gordon Wohlers, Coordinator, School Utilization Task Force, Los Angeles Unified School District; and Norm Brekke, Superintendent, Oxnard Elementary School District.

[12] It should be noted that these amounts are per pupil figures allowing comparison to the $25 to $125 per student incentives. On an unhoused basis, assuming 25 percent of the students were previously unhoused, elementary costs are $168 per unhoused student for air-conditioning and $64 per unhoused student for storage, in-service training, and planning.

expected to average approximately the same on a per pupil basis as traditional schools, with the possible exception of additional personnel costs and expected increases in maintenance and utility costs. Incidental costs, if they influence the situation at all, would appear to reduce expense of year-round education. In short, it seems clear that use of year-round schools has the potential to reduce the real costs of education in areas with existent overcrowding. Current incentives would appear to cover necessary costs and to provide extra funding that can be used to implement locally chosen options.

Current incentives, then, create a higher cost to the state for year-round education than is clearly indicated by required local expenditures. At the elementary level overcrowded districts are eligible to receive, on a yearly basis, $25 to $150 per student for the total enrollment of a year-round school.[13] The Legislative Analyst's 1987-88 budget analysis estimates $80 per student as the state average payment. If 15 percent of the student body were made up of previously unhoused students, as current legislation recommends, revenue to the district based on $25 per student would be equivalent to $167 per unhoused student. Payments based on an average figure of $80 per student in addition to the $25 figure would be $700 per unhoused student. If a district could qualify for the entire $150 per student, equivalent per unhoused student revenue could run as high as $1,000 in areas with excessive land or construction costs.[14] Air-conditioning incentives could drive this figure higher. Figure IV-2 depicts this situation graphically. Although year-round incentive costs to the state appear fairly substantial in relation to new construction costs, it should be noted that, in the event elementary enrollments subside after a few years, year-round programs can be discontinued if desired. New construction costs, by comparison, cannot be terminated. Moreover, districts are faced with the difficult problem of closing schools.

District-level costs are much more difficult to determine. The impact on the district of matching fees for new construction is not well understood. If new construction continues to result in a negligible net cost to districts, year-round operating costs must be essentially the same as traditional education in order to be competitive from a district perspective. State incentives can remove the cost of air-conditioning. Expected per student excess operating costs and first year transition costs

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[13] Or, for the current year, payment under SB 81 (Chapter 684, Statutes of 1986). Two hundred and thirty-five dollars was the amount allocated for elementary level unhoused students in 1986. In the same year junior high school level payments were $320, and high school incentives were $365 per unhoused student.

[14] Because determination of the amount of funding under the $125 incentive is dependent on the costs of land and construction in the area, new construction costs would be excessively high as well in areas which could command the full $150 per student.